

## **Portland Cement Manufacturing Industry NESHAP Requirements<sup>1</sup>**

### **Existing Kiln and Existing Clinker Cooler at Major Source of HAP Emissions**

#### **Global Requirements for Portland Cement Manufacturing Plants**

Subject to 40 CFR part 63 subpart LLL

**Applicability/Affected Sources:** 63.1340(a)

#### **§63.1340 What parts of my plant does this subpart cover?**

(a) The provisions of this subpart apply to each new and existing portland cement plant which is a major source or an area source as defined in §63.2.

**Compliance Dates:** 63.1351(a)-(d)

#### **§63.1351 Compliance dates.**

(a) The compliance date for any affected existing source subject to any rule requirements that were in effect before December 20, 2006, is:

- (1) June 14, 2002, for sources that commenced construction before or on March 24, 1998, or
- (2) June 14, 1999 or startup for sources that commenced construction after March 24, 1998.

(b) The compliance date for any affected existing source subject to any rule requirements that became effective on December 20, 2006, is:

- (1) December 21, 2009, for sources that commenced construction after December 2, 2005 and before or on December 20, 2006, or
- (2) Startup for sources that commenced construction after December 20, 2006.

(c) The compliance date for existing sources for all the requirements that became effective on February 12, 2013, except for the open clinker pile requirements will be September 9, 2015.

(d) The compliance date for new sources is February 12, 2013, or startup, whichever is later.

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<sup>1</sup> Disclaimer: The content provided in this software tool is intended solely as an aid in assessing requirements for compliance under the National Emissions Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry, 40 CFR part 63 subpart LLL. Any variation between the rule and the information provided in this tool is unintentional, and, in the case of such variations, the requirements of the rule govern. Use of this tool does not constitute an assessment by the EPA of the applicability of the rule to any particular facility. In any particular case, the EPA will make its assessment by applying the law and regulations to the specific facts of the case.

**Applicability of General Provisions:** 63.1342 and Table 1 to Subpart LLL of Part 63 – Applicability of General Provisions

**§63.1342 Standards: General.**

Table 1 to this subpart provides cross references to the 40 CFR part 63, subpart A, general provisions, indicating the applicability of the general provisions requirements to subpart LLL.

**Table 1 to Subpart LLL of Part 63 – Applicability of General Provisions** (For the regulatory text in this table, go to [subpart LLL](#).)

**Operation and Maintenance Plan:** 63.1347

**§63.1347 Operation and maintenance plan requirements.**

(a) You must prepare, for each affected source subject to the provisions of this subpart, a written operations and maintenance plan. The plan must be submitted to the Administrator for review and approval as part of the application for a part 70 permit and must include the following information:

(1) Procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the emissions limits and operating limits, including fugitive dust control measures for open clinker piles of §§63.1343, 63.1345, and 63.1346. Your operations and maintenance plan must address periods of startup and shutdown.

(2) Corrective actions to be taken when required by paragraph §63.1350(f)(3);

(3) Procedures to be used during an inspection of the components of the combustion system of each kiln and each in-line kiln raw mill located at the facility at least once per year.

(b) Failure to comply with any provision of the operations and maintenance plan developed in accordance with this section is a violation of the standard.

**Performance Testing Requirements – Reporting and Conditions of Tests:** 63.1349(d), (e)

**§63.1349 Performance testing requirements.**

(d) *Performance Test Reporting Requirements.* (1) You must submit the information specified in paragraphs (d)(1) and (2) of this section no later than 60 days following the initial performance test. All reports must be signed by a responsible official.

(i) The initial performance test data as recorded under paragraph (b) of this section.

(ii) The values for the site-specific operating limits or parameters established pursuant to paragraphs (b)(1), (3), (6), (7), and (8) of this section, as applicable, and a description, including sample calculations, of how the operating parameters were established during the initial performance test.

(2) As of December 31, 2011 and within 60 days after the date of completing each performance evaluation or test, as defined in §63.2, conducted to demonstrate compliance with any standard covered by this subpart, you must submit the relative accuracy test audit data and performance test data, except opacity data, to the EPA by successfully submitting the data electronically to the EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool(ERT) (see [http://www.epa.gov/ttn/chief/ert/ert\\_tool.html/](http://www.epa.gov/ttn/chief/ert/ert_tool.html/)).

(e) *Conditions of performance tests.* Conduct performance tests under such conditions as the Administrator specifies to the owner or operator based on representative performance of the affected source for the period being tested. Upon request, you must make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

**Monitoring – General:** 63.1350(a)

**§63.1350 Monitoring requirements.**

(a)(1) Following the compliance date, the owner or operator must demonstrate compliance with this subpart on a continuous basis by meeting the requirements of this section.

(2) [Reserved]

(3) For each existing unit that is equipped with a CMS, maintain the average emissions or the operating parameter values within the operating parameter limits established through performance tests.

(4) Any instance where the owner or operator fails to comply with the continuous monitoring requirements of this section is a violation.

**Monitoring – Clinker Production:** 63.1350(d)

**§63.1350 Monitoring requirements.**

(d) *Clinker production monitoring requirements.* In order to determine clinker production, you must:

(1) Determine hourly clinker production by one of two methods:

(i) Install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates in tons-mass per hour of the amount of clinker produced. The system of measuring hourly clinker production must be maintained within  $\pm 5$  percent accuracy, or

(ii) Install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates in tons-mass per hour of the amount of feed to the kiln. The system of measuring feed must be maintained within  $\pm 5$  percent accuracy. Calculate your hourly clinker production rate using a kiln-specific feed to clinker ratio based on reconciled clinker production determined for accounting purposes and recorded feed rates. Update this ratio monthly. Note that if this ratio changes at clinker reconciliation, you must use the new ratio going forward, but you do not have to retroactively change clinker production rates previously estimated.

(iii) [Reserved]

(2) Determine, record, and maintain a record of the accuracy of the system of measuring hourly clinker production (or feed mass flow if applicable) before initial use (for new sources) or by the effective compliance date of this rule (for existing sources). During each quarter of source operation, you must determine, record, and maintain a record of the ongoing accuracy of the system of measuring hourly clinker production (or feed mass flow).

(3) If you measure clinker production directly, record the daily clinker production rates; if you measure the kiln feed rates and calculate clinker production, record the hourly kiln feed and clinker production rates.

(4) Develop an emissions monitoring plan in accordance with paragraphs (p)(1) through (p)(4) of this section.

**Monitoring – Alternate Monitoring:** 63.1350(o)

**§63.1350 Monitoring requirements.**

(o) *Alternate monitoring requirements approval.* You may submit an application to the Administrator for approval of alternate monitoring requirements to demonstrate compliance with the emission standards of this subpart subject to the provisions of paragraphs (o)(1) through (6) of this section.

(1) The Administrator will not approve averaging periods other than those specified in this section, unless you document, using data or information, that the longer averaging period will ensure that emissions do not exceed levels achieved during the performance test over any increment of time equivalent to the time required to conduct three runs of the performance test.

(2) If the application to use an alternate monitoring requirement is approved, you must continue to use the original monitoring requirement until approval is received to use another monitoring requirement.

(3) You must submit the application for approval of alternate monitoring requirements no later than the notification of performance test. The application must contain the information specified in paragraphs (o)(3)(i) through (iii) of this section:

(i) Data or information justifying the request, such as the technical or economic infeasibility, or the impracticality of using the required approach;

(ii) A description of the proposed alternative monitoring requirement, including the operating parameter to be monitored, the monitoring approach and technique, the averaging period for the limit, and how the limit is to be calculated; and

(iii) Data or information documenting that the alternative monitoring requirement would provide equivalent or better assurance of compliance with the relevant emission standard.

(4) The Administrator will notify you of the approval or denial of the application within 90 calendar days after receipt of the original request, or within 60 calendar days of the receipt of any supplementary information, whichever is later. The Administrator will not approve an alternate monitoring application unless it would provide equivalent or better assurance of compliance with the relevant emission standard. Before disapproving any alternate monitoring application, the Administrator will provide:

(i) Notice of the information and findings upon which the intended disapproval is based; and

(ii) Notice of opportunity for you to present additional supporting information before final action is taken on the application. This notice will specify how much additional time is allowed for you to provide additional supporting information.

(5) You are responsible for submitting any supporting information in a timely manner to enable the Administrator to consider the application prior to the performance test. Neither submittal of an application, nor the Administrator's failure to approve or disapprove the application relieves you of the responsibility to comply with any provision of this subpart.

(6) The Administrator may decide at any time, on a case-by-case basis that additional or alternative operating limits, or alternative approaches to establishing operating limits, are necessary to demonstrate compliance with the emission standards of this subpart.

**Monitoring – Site-specific Monitoring Plan:** 63.1350(p)

**§63.1350 Monitoring requirements.**

(p) *Development and submittal (upon request) of monitoring plans.* If you demonstrate compliance with any applicable emissions limit through performance stack testing or other emissions monitoring, you must develop a site-specific monitoring plan according to the requirements in paragraphs (p)(1) through (4) of this section. This requirement also applies to you if you petition the EPA Administrator for alternative monitoring parameters under paragraph (o) of this section and §63.8(f). If you use a BLDS, you must also meet the requirements specified in paragraph (p)(5) of this section.

(1) For each CMS required in this section, you must develop, and submit to the permitting authority for approval upon request, a site-specific monitoring plan that addresses paragraphs (p)(1)(i) through (iii) of this section. You must submit this site-specific monitoring plan, if requested, at least 30 days before your initial performance evaluation of your CMS.

(i) Installation of the CMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device);

(ii) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems; and

(iii) Performance evaluation procedures and acceptance criteria (e.g., calibrations).

(2) In your site-specific monitoring plan, you must also address paragraphs (p)(2)(i) through (iii) of this section.

(i) Ongoing operation and maintenance procedures in accordance with the general requirements of §63.8(c)(1), (c)(3), and (c)(4)(ii);

(ii) Ongoing data quality assurance procedures in accordance with the general requirements of §63.8(d); and

(iii) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of §63.10(c), (e)(1), and (e)(2)(i).

(3) You must conduct a performance evaluation of each CMS in accordance with your site-specific monitoring plan.

(4) You must operate and maintain the CMS in continuous operation according to the site-specific monitoring plan.

(5) *BLDS monitoring plan.* Each monitoring plan must describe the items in paragraphs (p)(5)(i) through (v) of this section. At a minimum, you must retain records related to the site-specific monitoring plan and information discussed in paragraphs (m)(1) through (4), (m)(10) and (11) of this section for a period of 5 years, with at least the first 2 years on-site;

- (i) Installation of the BLDS;
- (ii) Initial and periodic adjustment of the BLDS, including how the alarm set-point will be established;
- (iii) Operation of the BLDS, including quality assurance procedures;
- (iv) How the BLDS will be maintained, including a routine maintenance schedule and spare parts inventory list;
- (v) How the BLDS output will be recorded and stored.

**Notification:** 63.1353 and Table 1 to Subpart LLL of Part 63 – Applicability of General Provisions

**§63.1353 Notification requirements.**

(a) The notification provisions of 40 CFR part 63, subpart A that apply and those that do not apply to owners and operators of affected sources subject to this subpart are listed in Table 1 of this subpart. If any State requires a notice that contains all of the information required in a notification listed in this section, the owner or operator may send the Administrator a copy of the notice sent to the State to satisfy the requirements of this section for that notification.

(b) Each owner or operator subject to the requirements of this subpart shall comply with the notification requirements in §63.9 as follows:

(1) Initial notifications as required by §63.9(b) through (d). For the purposes of this subpart, a Title V or 40 CFR part 70 permit application may be used in lieu of the initial notification required under §63.9(b), provided the same information is contained in the permit application as required by §63.9(b), and the State to which the permit application has been submitted has an approved operating permit program under part 70 of this chapter and has received delegation of authority from the EPA. Permit applications shall be submitted by the same due dates as those specified for the initial notification.

(2) Notification of performance tests, as required by §§63.7 and 63.9(e).

(3) Notification of opacity and visible emission observations required by §63.1349 in accordance with §§63.6(h)(5) and 63.9(f).

(4) Notification, as required by §63.9(g), of the date that the continuous emission monitor performance evaluation required by §63.8(e) is scheduled to begin.

(5) Notification of compliance status, as required by §63.9(h).

(6) Within 48 hours of an exceedance that triggers retesting to establish compliance and new operating limits, notify the appropriate permitting agency of the planned performance tests. The notification requirements of §§63.7(b) and 63.9(e) do not apply to retesting required for exceedances under this subpart.

**Table 1 to Subpart LLL of Part 63 – Applicability of General Provisions** (For the regulatory text in this table, go to [subpart LLL](#).)

**Reporting:** 63.1354 and Table 1 to Subpart LLL of Part 63 – Applicability of General Provisions

**§63.1354 Reporting requirements.**

(a) The reporting provisions of subpart A of this part that apply and those that do not apply to owners or operators of affected sources subject to this subpart are listed in Table 1 of this subpart. If any State requires a report that contains all of the information required in a report listed in this section, the owner or operator may send the Administrator a copy of the report sent to the State to satisfy the requirements of this section for that report.

(b) The owner or operator of an affected source shall comply with the reporting requirements specified in §63.10 of the general provisions of this part 63, subpart A as follows:

(1) As required by §63.10(d)(2), the owner or operator shall report the results of performance tests as part of the notification of compliance status.

(2) As required by §63.10(d)(3), the owner or operator of an affected source shall report the opacity results from tests required by §63.1349.

(3) As required by §63.10(d)(4), the owner or operator of an affected source who is required to submit progress reports as a condition of receiving an extension of compliance under §63.6(i) shall submit such reports by the dates specified in the written extension of compliance.

(4)-(5) [Reserved]

(6) As required by §63.10(e)(2), the owner or operator shall submit a written report of the results of the performance evaluation for the continuous monitoring system required by §63.8(e). The owner or operator shall submit the report simultaneously with the results of the performance test.

(7) As required by §63.10(e)(2), the owner or operator of an affected source using a continuous opacity monitoring system to determine opacity compliance during any performance test required under §63.7 and described in §63.6(d)(6) shall report the results of the continuous opacity monitoring system performance evaluation conducted under §63.8(e).

(8) As required by §63.10(e)(3), the owner or operator of an affected source equipped with a continuous emission monitor shall submit an excess emissions and continuous monitoring system performance report for any event when the continuous monitoring system data indicate the source is not in compliance with the applicable emission limitation or operating parameter limit.

(9) The owner or operator shall submit a summary report semiannually to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). (CEDRI can be accessed through the EPA's Central Data Exchange (CDX) ([www.epa.gov/cdx](http://www.epa.gov/cdx).) You must use the appropriate electronic report in CEDRI for this subpart. Instead of using the electronic report in CEDRI for this subpart, you may submit an alternate electronic file consistent with the extensible markup language (XML) schema listed on the CEDRI Web site (<http://www.epa.gov/ttn/chief/cedri/index.html>), once the XML schema is available. If the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, you must submit the report the Administrator at the appropriate address listed in §63.13. You must begin submitting reports via CEDRI no later than 90 days after the form becomes available in CEDRI. The reports must be submitted by the deadline specified in this subpart, regardless of the method in which the reports are submitted. The report must contain the information specified in §63.10(e)(3)(vi). In addition, the summary report shall include:

(i) All exceedances of maximum control device inlet gas temperature limits specified in §63.1346(a) and (b);

(ii) Notification of any failure to calibrate thermocouples and other temperature sensors as required under §63.1350(g)(1)(iii) of this subpart; and

(iii) Notification of any failure to maintain the activated carbon injection rate, and the activated carbon injection carrier gas flow rate or pressure drop, as applicable, as required under §63.1346(c)(2).

(iv) Notification of failure to conduct any combustion system component inspections conducted within the reporting period as required under §63.1347(a)(3).

(v) Any and all failures to comply with any provision of the operation and maintenance plan developed in accordance with §63.1347(a).

(vi) For each PM CPMS, HCl, Hg, and THC CEMS, D/F temperature monitoring system, or Hg sorbent trap monitoring system, within 60 days after the reporting periods, you must report all of the calculated 30-operating day rolling average values derived from the CPMS, CEMS, CMS, or Hg sorbent trap monitoring systems.

(vii) In response to each violation of an emissions standard or established operating parameter limit, the date, duration and description of each violation and the specific actions taken for each violation including inspections, corrective actions and repeat performance tests and the results of those actions.

(viii) Within 60 days after the date of completing each CEMS performance evaluation test as defined in §63.2, you must submit relative accuracy test audit (RATA) data to the EPA's CDX by using CEDRI in accordance with paragraph (b)(9) of this section. Only RATA pollutants that can be documented with the ERT (as listed on the ERT Web site) are subject to this requirement. For any performance evaluations with no corresponding RATA pollutants listed on the ERT Web site, you must submit the results of the performance evaluation to the Administrator at the appropriate address listed in §63.13.

(ix) For PM performance test reports used to set a PM CPMS operating limit, the electronic submission of the test report must also include the make and model of the PM CPMS instrument, serial number of the instrument, analytical principle of the instrument (*e.g.* beta attenuation), span of the instruments primary analytical range, milliamp value equivalent to the instrument zero output, technique by which this zero value was determined, and the average milliamp signals corresponding to each PM compliance test run.

(x) All reports required by this subpart not subject to the requirements in paragraphs (b)(9) introductory text and (b)(9)(viii) of this section must be sent to the Administrator at the appropriate address listed in §63.13. The Administrator or the delegated authority may request a report in any form suitable for the specific case (*e.g.*, by commonly used electronic media such as Excel spreadsheet, on CD or hard copy). The Administrator retains the right to require submittal of reports subject to paragraph (b)(9) introductory text and (b)(9)(viii) of this section in paper format.

(10) If the total continuous monitoring system downtime for any CEM or any continuous monitoring system (CMS) for the reporting period is ten percent or greater of the total operating time for the reporting period, the owner or operator shall submit an excess emissions and continuous monitoring system performance report along with the summary report.



(c) Reporting a failure to meet a standard due to a malfunction. For each failure to meet a standard or emissions limit caused by a malfunction at an affected source, you must report the failure in the semi-annual compliance report required by §63.1354(b)(9). The report must contain the date, time and duration, and the cause of each event (including unknown cause, if applicable), and a sum of the number of events in the reporting period. The report must list for each event the affected source or equipment, an estimate of the volume of each regulated pollutant emitted over the emission limit for which the source failed to meet a standard, and a description of the method used to estimate the emissions. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with §63.1348(d), including actions taken to correct a malfunction.

**Table 1 to Subpart LLL of Part 63 – Applicability of General Provisions** (For the regulatory text in this table, go to [subpart LLL](#).)

**Recordkeeping:** 63.1355 and Table 1 to Subpart LLL of Part 63 – Applicability of General Provisions

**§63.1355 Recordkeeping requirements.**

(a) The owner or operator shall maintain files of all information (including all reports and notifications) required by this section recorded in a form suitable and readily available for inspection and review as required by §63.10(b)(1). The files shall be retained for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two years of data shall be retained on site. The remaining three years of data may be retained off site. The files may be maintained on microfilm, on a computer, on floppy disks, on magnetic tape, or on microfiche.

(b) The owner or operator shall maintain records for each affected source as required by §63.10(b)(2) and (b)(3) of this part; and

(1) All documentation supporting initial notifications and notifications of compliance status under §63.9;

(2) All records of applicability determination, including supporting analyses; and

(3) If the owner or operator has been granted a waiver under §63.8(f)(6), any information demonstrating whether a source is meeting the requirements for a waiver of recordkeeping or reporting requirements.

(c) In addition to the recordkeeping requirements in paragraph (b) of this section, the owner or operator of an affected source equipped with a continuous monitoring system shall maintain all records required by §63.10(c).

(d) [Reserved]

(e) You must keep records of the daily clinker production rates and kiln feed rates.

(f) You must keep records of the date, time and duration of each startup or shutdown period for any affected source that is subject to a standard during startup or shutdown that differs from the standard applicable at other times, and the quantity of feed and fuel used during the startup or shutdown period.

(g)(1) You must keep records of the date, time and duration of each malfunction that causes an affected source to fail to meet an applicable standard; if there was also a monitoring malfunction, the date, time and duration of the monitoring malfunction; the record must list the affected source or equipment, an estimate of the volume of each regulated pollutant emitted over the standard for which the source failed to meet a standard, and a description of the method used to estimate the emissions.

(2) You must keep records of actions taken during periods of malfunction to minimize emissions in accordance with §63.1348(d) including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(h) For each exceedance from an emissions standard or established operating parameter limit, you must keep records of the date, duration and description of each exceedance and the specific actions taken for each exceedance including inspections, corrective actions and repeat performance tests and the results of those actions.

**Table 1 to Subpart LLL of Part 63 – Applicability of General Provisions** (For the regulatory text in this table, go to [subpart LLL](#).)

**Sources Subject to Multiple Emission Limits:** 63.1356

**§63.1356 Sources with multiple emissions limit or monitoring requirements.**

If you have an affected source subject to this subpart with a different emissions limit or requirement for the same pollutant under another regulation in title 40 of this chapter, once you are in compliance with the most stringent emissions limit or requirement, you are not subject to the less stringent requirement. Until you are in compliance with the more stringent limit, the less stringent limit continues to apply.

**Responsibility for Implementation and Enforcement:** 63.1358

**§63.1358 Implementation and enforcement.**

(a) This subpart can be implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable State, local, or Tribal agency. If the U.S. EPA Administrator has delegated authority to a State, local, or Tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. Contact the applicable U.S. EPA Regional Office to find out if this subpart is delegated to a State, local, or Tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or Tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the Administrator of U.S. EPA and cannot be transferred to the State, local, or Tribal agency.

(c) The authorities that cannot be delegated to State, local, or Tribal agencies are as specified in paragraphs (c)(1) through (4) of this section.

(1) Approval of alternatives to the requirements in §§63.1340, 63.1342 through 63.1348, and 63.1351.

(2) Approval of major alternatives to test methods under §63.7(e)(2)(ii) and (f), as defined in §63.90, and as required in this subpart.

(3) Approval of major alternatives to monitoring under §63.8(f), as defined in §63.90, and as required in this subpart.

(4) Approval of major alternatives to recordkeeping and reporting under §63.10(f), as defined in §63.90, and as required in this subpart.

**Permitting:** 63.1340(d)

**§63.1340 What parts of my plant does this subpart cover?**

(d) If you are subject to any of the provisions of this subpart you are also subject to title V permitting requirements.

## Portland Cement Manufacturing Industry NESHAP Requirements

### Existing Kiln

(Constructed on or before May 6, 2009)

#### **Applicability/Affected Sources:** 63.1340(b)(1)

#### **§63.1340 What parts of my plant does this subpart cover?**

(b) The affected sources subject to this subpart are:

(1) Each kiln including alkali bypasses and inline coal mills, except for kilns that burn hazardous waste and are subject to and regulated under subpart EEE of this part;

#### **Emission and Work Practice Standards – General:** 63.1343(a)

#### **§63.1343 What standards apply to my kilns, clinker coolers, raw material dryers, and open clinker storage piles?**

(a) General. The provisions in this section apply to each kiln and any alkali bypass associated with that kiln, clinker cooler, raw material dryer, and open clinker storage pile. All D/F, HCl, and total hydrocarbon (THC) emissions limit are on a dry basis. The D/F, HCl, and THC limits for kilns are corrected to 7 percent oxygen. All THC emissions limits are measured as propane. Standards for mercury and THC are based on a rolling 30-day average. If using a CEMS to determine compliance with the HCl standard, this standard is based on a rolling 30-day average. You must ensure appropriate corrections for moisture are made when measuring flow rates used to calculate mercury emissions. The 30-day period means all operating hours within 30 consecutive kiln operating days excluding periods of startup and shutdown. All emissions limits for kilns, clinker coolers, and raw material dryers currently in effect that are superseded by the limits below continue to apply until the compliance date of the limits below, or until the source certifies compliance with the limits below, whichever is earlier.

#### **Emission and Work Practice Standards – Emission Limits for PM, D/F, Mercury, THC:**

63.1343(b)(1), Table 1 #1

#### **§63.1343 What standards apply to my kilns, clinker coolers, raw material dryers, and open clinker storage piles?**

(b) Kilns, clinker coolers, raw material dryers, raw mills, and finish mills. (1) The emissions limits for these sources are shown in Table 1.

**Table 1—Emissions Limits for Kilns, Clinker Coolers, Raw Material Dryers, Raw and Finish Mills**

<b>If your source is a (an):</b>	<b>And the operating mode is:</b>	<b>And if is located at a:</b>	<b>Your emissions limits are:</b>	<b>And the units of the emissions limit are:</b>	<b>The oxygen correction factor is:</b>
1. Existing kiln	Normal operation	Major or area source	PM <sup>1</sup> 0.07	lb/ton clinker	NA.

If your source is a (an):	And the operating mode is:	And if is located at a:	Your emissions limits are:	And the units of the emissions limit are:	The oxygen correction factor is:
			D/F <sup>2</sup> 0.2	ng/dscm (TEQ)	7 percent.
			Mercury 55	lb/MM tons clinker	NA.
			THC <sup>34</sup> 24	ppmvd	7 percent.

<sup>1</sup>The initial and subsequent PM performance tests are performed using Method 5 or 5I and consist of three test runs.

<sup>2</sup>If the average temperature at the inlet to the first PM control device (fabric filter or electrostatic precipitator) during the D/F performance test is 400 °F or less, this limit is changed to 0.40 ng/dscm (TEQ).

<sup>3</sup>Measured as propane.

<sup>4</sup>Any source subject to the 24 ppmvd THC limit may elect to meet an alternative limit of 12 ppmvd for total organic HAP.

**Emission and Work Practice Standards – Emission Limits for HCl:** 63.1343(b)(1), Table 1 #2

**§63.1343 What standards apply to my kilns, clinker coolers, raw material dryers, and open clinker storage piles?**

(b) Kilns, clinker coolers, raw material dryers, raw mills, and finish mills. (1) The emissions limits for these sources are shown in Table 1.

**Table 1—Emissions Limits for Kilns, Clinker Coolers, Raw Material Dryers, Raw and Finish Mills**

If your source is a (an):	And the operating mode is:	And if is located at a:	Your emissions limits are:	And the units of the emissions limit are:	The oxygen correction factor is:
2. Existing kiln	Normal operation	Major source	HCl 3	ppmvd	7 percent.

**Emission and Work Practice Standards - PM Emission Limit When There is an Alkali Bypass and/or an Inline Coal Mill with a Separate Stack Associated with a Kiln:** 63.1343(b)(2)

**§63.1343 What standards apply to my kilns, clinker coolers, raw material dryers, and open clinker storage piles?**

(b) *Kilns, clinker coolers, raw material dryers, raw mills, and finish mills.*

(2) When there is an alkali bypass and/or an inline coal mill with a separate stack associated with a kiln, the combined PM emissions from the kiln and the alkali bypass stack and/or the inline coal mill stack are subject to the PM emissions limit. \* \* \*

**Emission and Work Practice Standards - Alternative PM Limit Where the Clinker Cooler Exhaust and/or Alkali Bypass and/or Coal Mill Exhaust are Combined with the Kiln Exhaust and the Combined Exhaust is Sent to the PM Control Device as a Single Stream:** 63.1343(b)(2), Equation 1

**§63.1343 What standards apply to my kilns, clinker coolers, raw material dryers, and open clinker storage piles?**

(b) *Kilns, clinker coolers, raw material dryers, raw mills, and finish mills.*

(2) \* \* \* Existing kilns that combine the clinker cooler exhaust and/or alkali bypass and/or coal mill exhaust with the kiln exhaust and send the combined exhaust to the PM control device as a single stream may meet an alternative PM emissions limit. This limit is calculated using Equation 1 of this section:

$$PM_{alt} = (0.0060 \times 1.65) (Q_k + Q_c + Q_{ab} + Q_{cm}) / (7000) \quad (\text{Eq. 1})$$

Where:

$PM_{alt}$  = Alternative PM emission limit for commingled sources.

0.006 = The PM exhaust concentration (gr/dscf) equivalent to 0.070 lb per ton clinker where clinker cooler and kiln exhaust gas are not combined.

1.65 = The conversion factor of ton feed per ton clinker.

$Q_k$  = The exhaust flow of the kiln (dscf/ton feed).

$Q_c$  = The exhaust flow of the clinker cooler (dscf/ton feed).

$Q_{ab}$  = The exhaust flow of the alkali bypass (dscf/ton feed).

$Q_{cm}$  = The exhaust flow of the coal mill (dscf/ton feed).

7000 = The conversion factor for grains (gr) per lb.

**Emission and Work Practice Standards – Startup and Shutdown:** 63.1343(b)(1), Table 1 #3, 63.1346(g)

**§63.1343 What standards apply to my kilns, clinker coolers, raw material dryers, and open clinker storage piles?**

(b) Kilns, clinker coolers, raw material dryers, raw mills, and finish mills. (1) The emissions limits for these sources are shown in Table 1.

**Table 1—Emissions Limits for Kilns, Clinker Coolers, Raw Material Dryers, Raw and Finish Mills**

<b>If your source is a (an):</b>	<b>And the operating mode is:</b>	<b>And if is located at a:</b>	<b>Your emissions limits are:</b>	<b>And the units of the emissions limit are:</b>	<b>The oxygen correction factor is:</b>
3. Existing kiln	Startup and shutdown	Major or area source	Work practices (63.1346(g))	NA	NA.

**§63.1346 Operating limits for kilns.**

(g) During periods of startup and shutdown you must meet the requirements listed in (g)(1) through (4) of this section.

(1) During startup you must use any one or combination of the following clean fuels: natural gas, synthetic natural gas, propane, distillate oil, synthesis gas (syngas), and ultra-low sulfur diesel (ULSD) until the kiln reaches a temperature of 1200 degrees Fahrenheit.

(2) Combustion of the primary kiln fuel may commence once the kiln temperature reaches 1200 degrees Fahrenheit.

(3) All dry sorbent and activated carbon systems that control hazardous air pollutants must be turned on and operating at the time the gas stream at the inlet to the baghouse or ESP reaches 300 degrees Fahrenheit (five minute average) during startup. Temperature of the gas stream is to be measured at the inlet of the baghouse or ESP every minute. Such injection systems can be turned off during shutdown. Particulate control and all remaining devices that control hazardous air pollutants should be operational during startup and shutdown.

(4) You must keep records as specified in §63.1355 during periods of startup and shutdown.

**Operating Limits – Kiln Subject to D/F Emissions Limit Under 63.1343:** 63.1346(a)-(e)

**§63.1346 Operating limits for kilns.**

(a) The owner or operator of a kiln subject to a D/F emissions limitation under §63.1343 must operate the kiln such that the temperature of the gas at the inlet to the kiln PM control device (PMCD) and alkali bypass PMCD, if applicable, does not exceed the applicable temperature limit specified in paragraph (b) of this section. The owner or operator of an in-line kiln/raw mill subject to a D/F emissions limitation under §63.1343 must operate the in-line kiln/raw mill, such that:

(1) When the raw mill of the in-line kiln/raw mill is operating, the applicable temperature limit for the main in-line kiln/raw mill exhaust, specified in paragraph (b) of this section and established during the performance test when the raw mill was operating, is not exceeded, except during periods of startup and shutdown when the temperature limit may be exceeded by no more than 10 percent.

(2) When the raw mill of the in-line kiln/raw mill is not operating, the applicable temperature limit for the main in-line kiln/raw mill exhaust, specified in paragraph (b) of this section and established during the performance test when the raw mill was not operating, is not exceeded, except during periods of startup/shutdown when the temperature limit may be exceeded by no more than 10 percent.

(3) If the in-line kiln/raw mill is equipped with an alkali bypass, the applicable temperature limit for the alkali bypass specified in paragraph (b) of this section and established during the performance test, with or without the raw mill operating, is not exceeded, except during periods of startup/shutdown when the temperature limit may be exceeded by no more than 10 percent.

(b) The temperature limit for affected sources meeting the limits of paragraph (a) of this section or paragraphs (a)(1) through (a)(3) of this section is determined in accordance with §63.1349(b)(3)(iv).

(c) For an affected source subject to a D/F emissions limitation under §63.1343 that employs sorbent injection as an emission control technique for D/F control, you must operate the sorbent injection system in accordance with paragraphs (c)(1) and (2) of this section.

(1) The rolling three-hour average activated sorbent injection rate must be equal to or greater than the sorbent injection rate determined in accordance with §63.1349(b)(3)(vi).

(2) You must either:

(i) Maintain the minimum activated carbon injection carrier gas flow rate, as a rolling three-hour average, based on the manufacturer's specifications. These specifications must be documented in the test plan developed in accordance with §63.7(c), or

(ii) Maintain the minimum activated carbon injection carrier gas pressure drop, as a rolling three-hour average, based on the manufacturer's specifications. These specifications must be documented in the test plan developed in accordance with §63.7(c).

(d) Except as provided in paragraph (e) of this section, for an affected source subject to a D/F emissions limitation under §63.1343 that employs carbon injection as an emission control technique you must specify and use the brand and type of sorbent used during the performance test until a subsequent performance test is conducted, unless the site-specific performance test plan contains documentation of key parameters that affect adsorption and the owner or operator establishes limits based on those parameters, and the limits on these parameters are maintained.

(e) For an affected source subject to a D/F emissions limitation under §63.1343 that employs carbon injection as an emission control technique you may substitute, at any time, a different brand or type of sorbent provided that the replacement has equivalent or improved properties compared to the sorbent specified in the site-specific performance test plan and used in the performance test. The owner or operator must maintain documentation that the substitute sorbent will provide the same or better level of control as the original sorbent.

**Operating Limits – Conditions on Use of Fly Ash:** 63.1346(f)

**§63.1346 Operating limits for kilns.**

(f) No kiln may use as a raw material or fuel any fly ash where the mercury content of the fly ash has been increased through the use of activated carbon, or any other sorbent, unless the facility can demonstrate that the use of that fly ash will not result in an increase in mercury emissions over baseline emissions (i.e., emissions not using the fly ash). The facility has the burden of proving there has been no emissions increase over baseline. Once the kiln is in compliance with a mercury emissions limit specified in §63.1343, this paragraph no longer applies.



**Operating Limits – Startup and Shutdown:** 63.1346(g)

**§63.1346 Operating limits for kilns.**

(g) During periods of startup and shutdown you must meet the requirements listed in (g)(1) through (4) of this section.

(1) During startup you must use any one or combination of the following clean fuels: natural gas, synthetic natural gas, propane, distillate oil, synthesis gas (syngas), and ultra-low sulfur diesel (ULSD) until the kiln reaches a temperature of 1200 degrees Fahrenheit.

(2) Combustion of the primary kiln fuel may commence once the kiln temperature reaches 1200 degrees Fahrenheit.

(3) All dry sorbent and activated carbon systems that control hazardous air pollutants must be turned on and operating at the time the gas stream at the inlet to the baghouse or ESP reaches 300 degrees Fahrenheit (five minute average) during startup. Temperature of the gas stream is to be measured at the inlet of the baghouse or ESP every minute. Such injection systems can be turned off during shutdown. Particulate control and all remaining devices that control hazardous air pollutants should be operational during startup and shutdown.

(4) You must keep records as specified in §63.1355 during periods of startup and shutdown.

**Operation and Maintenance Plan:** 63.1347

**§63.1347 Operation and maintenance plan requirements.**

(a) You must prepare, for each affected source subject to the provisions of this subpart, a written operations and maintenance plan. The plan must be submitted to the Administrator for review and approval as part of the application for a part 70 permit and must include the following information:

(1) Procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the emissions limits and operating limits, including fugitive dust control measures for open clinker piles of §§63.1343, 63.1345, and 63.1346. Your operations and maintenance plan must address periods of startup and shutdown.

(2) Corrective actions to be taken when required by paragraph §63.1350(f)(3);

(3) Procedures to be used during an inspection of the components of the combustion system of each kiln and each in-line kiln raw mill located at the facility at least once per year.

(b) Failure to comply with any provision of the operations and maintenance plan developed in accordance with this section is a violation of the standard.

**Compliance Requirements – Initial Performance Test Requirements:** 63.1348(a), (a)(1), (3) - (7)

**§63.1348 Compliance requirements.**

(a) *Initial Performance Test Requirements.* For an affected source subject to this subpart, you must demonstrate compliance with the emissions standards and operating limits by using the test methods and procedures in §§63.1349 and 63.7. Any cement kiln that has been subject to the requirements of subpart CCCC or subpart DDDD of 40 CFR Part 60, and is now electing to cease burning nonhazardous solid

waste and become subject to this subpart, must meet all the initial compliance testing requirements each time it becomes subject to this subpart, even if it was previously subject to this subpart.

NOTE TO PARAGRAPH (a): The first day of the 30 operating day performance test is the first day after the compliance date following completion of the field testing and data collection that demonstrates that the CPMS or CEMS has satisfied the relevant CPMS performance evaluation or CEMS performance specification (e.g., PS 2, 12A, or 12B) acceptance criteria. The performance test period is complete at the end of the 30th consecutive operating day. See §63.1341 for definition of operating day and §63.1348(b)(1) for the CEMS operating requirements. The source has the option of performing the compliance test earlier than the compliance date if desired.

(1) *PM Compliance.* If you are subject to limitations on PM emissions under §63.1343(b), you must demonstrate compliance with the PM emissions standards by using the test methods and procedures in §63.1349(b)(1).

(3) *D/F compliance.* (i) If you are subject to limitations on D/F emissions under §63.1343(b), you must demonstrate initial compliance with the D/F emissions standards by using the performance test methods and procedures in §63.1349(b)(3). The owner or operator of a kiln with an in-line raw mill must demonstrate initial compliance by conducting separate performance tests while the raw mill is operating and the raw mill is not operating. The D/F concentration must be determined for each run and the arithmetic average of the concentrations measured for the three runs must be calculated to determine compliance. The owner or operator of a kiln with an in-line raw mill must demonstrate compliance by conducting separate performance tests while the raw mill is operating and while the raw mill is not operating. Determine the D/F TEQ concentration for each run and calculate the arithmetic average of the TEQ concentrations measured for the three runs to determine continuous compliance.

(ii) If you are subject to a D/F emissions limitation under §63.1343(b), you must demonstrate compliance with the temperature operating limits specified in §63.1346 by using the performance test methods and procedures in §63.1349(b)(3)(ii) through (b)(3)(iv). Use the arithmetic average of the temperatures measured during the three runs to determine the applicable temperature limit.

(iii) If activated carbon injection is used and you are subject to a D/F emissions limitation under §63.1343(b), you must demonstrate compliance with the activated carbon injection rate operating limits specified in §63.1346 by using the performance test methods and procedures in §63.1349(b)(3)(v).

(iv) If activated carbon injection is used, you must also develop a carrier gas parameter (either the carrier gas flow rate or the carrier gas pressure drop) during the initial performance test and updated during any subsequent performance test conducted under §63.1349(b)(3) that meets the requirements of §63.1349(b)(3)(vi). Compliance is demonstrated if the system is maintained within  $\pm 5$  percent accuracy during the performance test determined in accordance with the procedures and criteria submitted for review in your monitoring plan required in section 63.1350(p).

(4)(i) *THC Compliance.* If you are subject to limitations on THC emissions under §63.1343(b), you must demonstrate compliance with the THC emissions standards by using the performance test methods and procedures in §63.1349(b)(4)(i). You must use the average THC concentration obtained during the first 30 kiln operating days after the compliance date of this rule to determine initial compliance.

(ii) *Total Organic HAP Emissions Tests.* If you elect to demonstrate compliance with the total organic HAP emissions limit under §63.1343(b) in lieu of the THC emissions limit, you must demonstrate compliance with the total organic HAP emissions standards by using the performance test methods and procedures in §63.1349(b)(7).

(iii) If you are demonstrating initial compliance, you must conduct the separate performance tests as specified in §63.1349(b)(7) while the raw mill of the inline kiln/raw mill is operating and while the raw mill of the inline kiln/raw mill is not operating.

(iv) The time weighted average total organic HAP concentration measured during the separate initial performance test specified by §63.1349(b)(7) must be used to determine initial compliance.

(v) The time weighted average THC concentration measured during the initial performance test specified by §63.1349(b)(4) must be used to determine the site-specific THC limit. Using the fraction of time the inline kiln/raw mill is on and the fraction of time that the inline kiln/raw mill is off, calculate this limit as a time weighted average of the THC levels measured during raw mill on and raw mill off testing using one of the two approaches in §63.1349(b)(7)(vii) or (viii) depending on the level of organic HAP measured during the compliance test.

(5) *Mercury Compliance.* If you are subject to limitations on mercury emissions in §63.1343(b), you must demonstrate compliance with the mercury standards by using the performance test methods and procedures in §63.1349(b)(5). You must demonstrate compliance by operating a mercury CEMS or a sorbent trap based CEMS. Compliance with the mercury emissions standard must be determined based on the first 30 operating days you operate a mercury CEMS or sorbent trap monitoring system after the compliance date of this rule.

(i) In calculating a 30 operating day emissions value using an integrating sorbent trap CEMS, assign the average Hg emissions concentration determined for an integrating period (e.g., 7 day sorbent trap monitoring system sample) to each relevant hour of the kiln operating days spanned by each integrated sample. Calculate the 30 kiln operating day emissions rate value using the assigned hourly Hg emissions concentrations and the respective flow and production rate values collected during the 30 kiln operating day performance test period. Depending on the duration of each integrated sampling period, you may not be able to calculate the 30 kiln operating day emissions value until several days after the end of the 30 kiln operating day performance test period.

(ii) For example, a sorbent trap monitoring system producing an integrated 7-day sample will provide Hg concentration data for each hour of the first 28 kiln operating days (i.e., four values spanning 7 days each) of a 30 operating day period. The Hg concentration values for the hours of the last 2 days of the 30 operating day period will not be available for calculating the emissions for the performance test period until at least five days after the end of the subject period.

(6) *HCl Compliance.* If you are subject to limitations on HCl emissions under §63.1343(b), you must demonstrate initial compliance with the HCl standards by using the performance test methods and procedures in §63.1349(b)(6).

(i) For an affected source that is equipped with a wet scrubber, tray tower or dry scrubber, you may demonstrate initial compliance by conducting a performance test as specified in §63.1349(b)(6)(i). You must determine the HCl concentration for each run and calculate the arithmetic average of the concentrations measured for the three runs to determine compliance. You must also establish appropriate site-specific operational parameter limits.

(ii) For an affected source that is not equipped with a wet scrubber, tray tower or dry scrubber, you must demonstrate initial compliance by operating a CEMS as specified in §63.1349(b)(6)(ii). You must use the average of the hourly HCl values obtained during the first 30 kiln operating days that occur after the compliance date of this rule to determine initial compliance.

(7) *Commingled Exhaust Requirements.* If the coal mill exhaust is commingled with kiln exhaust in a single stack, you may demonstrate compliance with the kiln emission limits by either:

(i) Performing required emissions monitoring and testing on the commingled coal mill and kiln exhaust, or

(ii) Perform required emission monitoring and testing of the kiln exhaust prior to the reintroduction of the coal mill exhaust, and also testing the kiln exhaust diverted to the coal mill. All emissions must be added together for all emission points, and must not exceed the limit per each pollutant as listed in §63.1343(b).

**Compliance Requirements – Continuous Monitoring Requirements:** 63.1348(b), (b)(1), (2), (4)-(8)

**§63.1348 Compliance requirements.**

(b) *Continuous Monitoring Requirements.* You must demonstrate compliance with the emissions standards and operating limits by using the performance test methods and procedures in §§63.1350 and 63.8 for each affected source.

(1) *General Requirements.* (i) You must monitor and collect data according to §63.1350 and the site-specific monitoring plan required by §63.1350(p).

(ii) Except for periods of startup and shutdown, monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), you must operate the monitoring system and collect data at all required intervals at all times the affected source is operating.

(iii) You may not use data recorded during monitoring system startup, shutdown or malfunctions or repairs associated with monitoring system malfunctions in calculations used to report emissions or operating levels. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system.

(iv) *Clinker Production.* If you are subject to limitations on mercury emissions (lb/MM tons of clinker) under §63.1343(b), you must determine the hourly production rate of clinker according to the requirements of §63.1350(d).

(2) *PM Compliance.* If you are subject to limitations on PM emissions under §63.1343(b), you must use the monitoring methods and procedures in §63.1350(b) and (d).

(4) *D/F Compliance.* If you are subject to a D/F emissions limitation under §63.1343(b), you must demonstrate compliance using a CMS that is installed, operated and maintained to record the temperature of specified gas streams in accordance with the requirements of §63.1350(g).

(5)(i) *Activated Carbon Injection Compliance.* If you use activated carbon injection to comply with the D/F emissions limitation under §63.1343(b), you must demonstrate compliance using a CMS that is installed, operated, and maintained to record the rate of activated carbon injection in accordance with the requirements §63.1350(h)(1).

(ii) If you use activated carbon injection to comply with the D/F emissions limitation under §63.1343(b), you must demonstrate compliance using a CMS that is installed, operated and maintained to record the activated carbon injection system gas parameter in accordance with the requirements of §63.1350(h)(2).

(6) *THC Compliance.* (i) If you are subject to limitations on THC emissions under §63.1343(b), you must demonstrate compliance using the monitoring methods and procedures in §63.1350(i) and (j).

(ii) THC must be measured either upstream of the coal mill or in the coal mill stack.

(7) *Mercury Compliance.* (i) If you are subject to limitations on mercury emissions in §63.1343(b), you must demonstrate compliance using the monitoring methods and procedures in §63.1350(k). If you use an integrated sorbent trap monitoring system to determine ongoing compliance, use the procedures described in §63.1348(a)(5) to assign hourly mercury concentration values and to calculate rolling 30 operating day emissions rates. Since you assign the mercury concentration measured with the sorbent trap to each relevant hour respectively for each operating day of the integrated period, you may schedule the sorbent trap change periods to any time of the day (i.e., the sorbent trap replacement need not be scheduled at 12:00 midnight nor must the sorbent trap replacements occur only at integral 24-hour intervals).

(ii) Mercury must be measured either upstream of the coal mill or in the coal mill stack.

(8) *HCl Compliance.* If you are subject to limitations on HCl emissions under §63.1343(b), you must demonstrate compliance using the performance test methods and procedures in §63.1349(b)(6).

(i) For an affected source that is not equipped with a wet scrubber, tray tower or a dry sorbent injection system, you must demonstrate compliance using the monitoring methods and procedures in §63.1350(l)(1).

(ii) For an affected source that is equipped with a wet scrubber, tray tower or a dry sorbent injection system, you may demonstrate compliance using the monitoring methods and procedures in §63.1350(l)(2).

(iii) HCl may be measured either upstream of the coal mill or in the coal mill stack.

(iv) As an alternative to paragraph (b)(8)(ii) of this section, you may use an SO<sub>2</sub> CEMS to establish an SO<sub>2</sub> operating level during your initial and repeat HCl performance tests and monitor the SO<sub>2</sub> level using the procedures in §63.1350(l)(3).

**Compliance Requirements – Continuous Monitoring Requirements for Startup and Shutdown:**  
63.1348(b)(9)

**§63.1348 Compliance requirements.**

(b) *Continuous Monitoring Requirements.* You must demonstrate compliance with the emissions standards and operating limits by using the performance test methods and procedures in §§63.1350 and 63.8 for each affected source.

(9) *Startup and Shutdown Compliance.* All dry sorbent and activated carbon systems that control hazardous air pollutants must be turned on and operating at the time the gas stream at the inlet to the baghouse or ESP reaches 300 degrees Fahrenheit (five minute average) during startup. Temperature of the

gas stream is to be measured at the inlet of the baghouse or ESP every minute. Such injection systems can be turned off during shutdown. Particulate control and all remaining devices that control hazardous air pollutants should be operational during startup and shutdown.

**Compliance Requirements – Changes in Operation:** 63.1348(c)

**§63.1348 Compliance requirements.**

(c) *Changes in operations.* (1) If you plan to undertake a change in operations that may adversely affect compliance with an applicable standard, operating limit, or parametric monitoring value under this subpart, the source must conduct a performance test as specified in §63.1349(b).

(2) In preparation for and while conducting a performance test required in §63.1349(b), you may operate under the planned operational change conditions for a period not to exceed 360 hours, provided that the conditions in (c)(2)(i) through (c)(2)(iv) of this section are met. You must submit temperature and other monitoring data that are recorded during the pretest operations.

(i) You must provide the Administrator written notice at least 60 days prior to undertaking an operational change that may adversely affect compliance with an applicable standard under this subpart for any source, or as soon as practicable where 60 days advance notice is not feasible. Notice provided under this paragraph must include a description of the planned change, the emissions standards that may be affected by the change, and a schedule for completion of the performance test required under paragraph (c)(1) of this section, including when the planned operational change period would begin.

(ii) The performance test results must be documented in a test report according to §63.1349(a).

(iii) A test plan must be made available to the Administrator prior to performance testing, if requested.

(iv) The performance test must be completed within 360 hours after the planned operational change period begins.

**Compliance Requirements – General Duty to Minimize Emissions:** 63.1348(d)

**§63.1348 Compliance requirements.**

(d) *General duty to minimize emissions.* At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

**Performance Testing Requirements – General Requirements:** 63.1349(a)

**§63.1349 Performance testing requirements.**

(a) You must document performance test results in complete test reports that contain the information required by paragraphs (a)(1) through (10) of this section, as well as all other relevant information. As described in §63.7(c)(2)(i), you must make available to the Administrator prior to testing, if requested, the

site-specific test plan to be followed during performance testing. For purposes of determining exhaust gas flow rate to the atmosphere from an alkali bypass stack or a coal mill stack, you must either install, operate, calibrate and maintain an instrument for continuously measuring and recording the exhaust gas flow rate according to the requirements in paragraphs §63.1350(n)(1) through (10) of this subpart or use the maximum design exhaust gas flow rate. For purposes of determining the combined emissions from kilns equipped with an alkali bypass or that exhaust kiln gases to a coal mill that exhausts through a separate stack, instead of installing a CEMS on the alkali bypass stack or coal mill stack, you may use the results of the initial and subsequent performance test to demonstrate compliance with the relevant emissions limit.

- (1) A brief description of the process and the air pollution control system;
- (2) Sampling location description(s);
- (3) A description of sampling and analytical procedures and any modifications to standard procedures;
- (4) Test results;
- (5) Quality assurance procedures and results;
- (6) Records of operating conditions during the performance test, preparation of standards, and calibration procedures;
- (7) Raw data sheets for field sampling and field and laboratory analyses;
- (8) Documentation of calculations;
- (9) All data recorded and used to establish parameters for monitoring; and
- (10) Any other information required by the performance test method

**Performance Testing Requirements – Pollutant Specific Requirements for PM, D/F, Mercury, and Total Organic HAP: 63.1349(b)(1), (3) – (5), (7)**

**§63.1349 Performance testing requirements.**

(b)(1) *PM emissions tests.* The owner or operator of a kiln and clinker cooler subject to limitations on PM emissions shall demonstrate initial compliance by conducting a performance test using Method 5 or Method 5I at appendix A-3 to part 60 of this chapter. You must also monitor continuous performance through use of a PM continuous parametric monitoring system (PM CPMS).

(i) For your PM CPMS, you will establish a site-specific operating limit. If your PM performance test demonstrates your PM emission levels to be below 75 percent of your emission limit you will use the average PM CPMS value recorded during the PM compliance test, the milliamp or digital equivalent of zero output from your PM CPMS, and the average PM result of your compliance test to establish your operating limit. If your PM compliance test demonstrates your PM emission levels to be at or above 75 percent of your emission limit you will use the average PM CPMS value recorded during the PM compliance test to establish your operating limit. You will use the PM CPMS to demonstrate continuous compliance with your operating limit. You must repeat the performance test annually and reassess and adjust the site-specific operating limit in accordance with the results of the performance test.

(A) Your PM CPMS must provide a 4-20 milliamp or digital signal output and the establishment of its relationship to manual reference method measurements must be determined in units of milliamps or the monitors digital equivalent.

(B) Your PM CPMS operating range must be capable of reading PM concentrations from zero to a level equivalent to three times your allowable emission limit. If your PM CPMS is an auto-ranging instrument capable of multiple scales, the primary range of the instrument must be capable of reading PM concentration from zero to a level equivalent to three times your allowable emission limit.

(C) During the initial performance test or any such subsequent performance test that demonstrates compliance with the PM limit, record and average all milliamp or digital output values from the PM CPMS for the periods corresponding to the compliance test runs (*e.g.*, average all your PM CPMS output values for three corresponding Method 5I test runs).

(ii) Determine your operating limit as specified in paragraphs (b)(1)(iii) through (iv) of this section. If your PM performance test demonstrates your PM emission levels to be below 75 percent of your emission limit you will use the average PM CPMS value recorded during the PM compliance test, the milliamp or digital equivalent of zero output from your PM CPMS, and the average PM result of your compliance test to establish your operating limit. If your PM compliance test demonstrates your PM emission levels to be at or above 75 percent of your emission limit you will use the average PM CPMS value recorded during the PM compliance test to establish your operating limit. You must verify an existing or establish a new operating limit after each repeated performance test. You must repeat the performance test at least annually and reassess and adjust the site-specific operating limit in accordance with the results of the performance test.

(iii) If the average of your three Method 5 or 5I compliance test runs is below 75 percent of your PM emission limit, you must calculate an operating limit by establishing a relationship of PM CPMS signal to PM concentration using the PM CPMS instrument zero, the average PM CPMS values corresponding to the three compliance test runs, and the average PM concentration from the Method 5 or 5I compliance test with the procedures in (b)(1)(iii)(A) through (D) of this section.

(A) Determine your PM CPMS instrument zero output with one of the following procedures:

(1) Zero point data for in-situ instruments should be obtained by removing the instrument from the stack and monitoring ambient air on a test bench.

(2) Zero point data for extractive instruments should be obtained by removing the extractive probe from the stack and drawing in clean ambient air.

(3) The zero point may also be established by performing manual reference method measurements when the flue gas is free of PM emissions or contains very low PM concentrations (*e.g.*, when your process is not operating, but the fans are operating or your source is combusting only natural gas) and plotting these with the compliance data to find the zero intercept.

(4) If none of the steps in paragraphs (b)(1)(iii)(A)(1) through (3) of this section are possible, you must use a zero output value provided by the manufacturer.

(B) Determine your PM CPMS instrument average in milliamps or digital equivalent, and the average of your corresponding three PM compliance test runs, using equation 3.



$$\bar{x} = \frac{1}{n} \sum_{i=1}^n X_i, \bar{y} = \frac{1}{n} \sum_{i=1}^n Y_i \quad (\text{Eq. 3})$$

Where:

$X_i$  = The PM CPMS data points for the three runs constituting the performance test.

$Y_i$  = The PM concentration value for the three runs constituting the performance test.

$n$  = The number of data points.

(C) With your instrument zero expressed in milliamps or a digital value, your three run average PM CPMS milliamp or digital signal value, and your three run PM compliance test average, determine a relationship of lb/ton-clinker per milliamp or digital signal value with Equation 4.

$$R = \frac{Y_1}{(X_1 - z)} \quad (\text{Eq. 4})$$

Where:

$R$  = The relative lb/ton-clinker per milliamp or digital equivalent for your PM CPMS.

$Y_1$  = The three run average lb/ton-clinker PM concentration.

$X_1$  = The three run average milliamp or digital equivalent output from your PM CPMS.

$z$  = The milliamp or digital equivalent of your instrument zero determined from (b)(1)(iii)(A).

(D) Determine your source specific 30-day rolling average operating limit using the lb/ton-clinker per milliamp or digital signal value from Equation 4 in Equation 5, below. This sets your operating limit at the PM CPMS output value corresponding to 75 percent of your emission limit.

$$O_1 = z + \frac{0.75 (L)}{R} \quad (\text{Eq. 5})$$

Where:

$O_1$  = The operating limit for your PM CPMS on a 30-day rolling average, in milliamps or the digital equivalent.

$L$  = Your source emission limit expressed in lb/ton clinker.

$z$  = Your instrument zero in milliamps, or digital equivalent, determined from (b)(1)(iii)(A).

$R$  = The relative lb/ton-clinker per milliamp, or digital equivalent, for your PM CPMS, from Equation 4.

(iv) If the average of your three PM compliance test runs is at or above 75 percent of your PM emission limit you must determine your operating limit by averaging the PM CPMS milliamp or digital equivalent output corresponding to your three PM performance test runs that demonstrate compliance with the emission limit using Equation 6.

$$O_h = \frac{1}{n} \sum_{i=1}^n X_i \quad (\text{Eq. 6})$$

Where:

$X_i$  = The PM CPMS data points for all runs  $i$ .

$n$  = The number of data points.

$O_h$  = Your site specific operating limit, in milliamps or the digital equivalent.

(v) To determine continuous operating compliance, you must record the PM CPMS output data for all periods when the process is operating, and use all the PM CPMS data for calculations when the source is not out-of-control. You must demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (milliamps or the digital equivalent) on a 30 operating day rolling average basis, updated at the end of each new kiln operating day. Use Equation 7 to determine the 30 kiln operating day average.

$$30 \text{ kiln operating day} = \frac{\sum_{i=1}^n Hpvi}{n} \quad (\text{Eq. 7})$$

Where:

$Hpvi$  = The hourly parameter value for hour  $i$ .

$n$  = The number of valid hourly parameter values collected over 30 kiln operating days.

(vi) For each performance test, conduct at least three separate test runs each while the mill is on and the mill is off, under the conditions that exist when the affected source is operating at the level reasonably expected to occur. Conduct each test run to collect a minimum sample volume of 2 dscm for determining compliance with a new source limit and 1 dscm for determining compliance with an existing source limit. Calculate the time weighted average of the results from three consecutive runs, including applicable sources as required by (b)(1)(viii), to determine compliance. You need not determine the particulate matter collected in the impingers (“back half”) of the Method 5 or Method 5I particulate sampling train to demonstrate compliance with the PM standards of this subpart. This shall not preclude the permitting authority from requiring a determination of the “back half” for other purposes.

(vii) For PM performance test reports used to set a PM CPMS operating limit, the electronic submission of the test report must also include the make and model of the PM CPMS instrument, serial

number of the instrument, analytical principle of the instrument (*e.g.* beta attenuation), span of the instruments primary analytical range, milliamp value or digital equivalent to the instrument zero output, technique by which this zero value was determined, and the average milliamp or digital equivalent signals corresponding to each PM compliance test run.

(viii) When there is an alkali bypass and/or an inline coal mill with a separate stack associated with a kiln, the main exhaust and alkali bypass and/or inline coal mill must be tested simultaneously and the combined emission rate of PM from the kiln and alkali bypass and/or inline coal mill must be computed for each run using Equation 8 of this section.

$$E_{cm} = \frac{E_K + E_B + E_C}{P} \quad (\text{Eq. 8})$$

Where:

$E_{cm}$  = Combined hourly emission rate of PM from the kiln and bypass stack and/or inline coal mill, lb/ton of kiln clinker production.

$E_K$  = Hourly emissions of PM emissions from the kiln, lb.

$E_B$  = Hourly PM emissions from the alkali bypass stack, lb.

$E_C$  = Hourly PM emissions from the inline coal mill stack, lb.

$P$  = Hourly clinker production, tons.

(ix) The owner or operator of a kiln with an in-line raw mill and subject to limitations on PM emissions shall demonstrate initial compliance by conducting separate performance tests while the raw mill is under normal operating conditions and while the raw mill is not operating, and calculate the time weighted average emissions. The operating limit will then be determined using 63.1349(b)(1)(i) of this section.

(3) *D/F Emissions Tests.* If you are subject to limitations on D/F emissions under this subpart, you must conduct a performance test using Method 23 of appendix A-7 to part 60 of this chapter. If your kiln or in-line kiln/raw mill is equipped with an alkali bypass, you must conduct simultaneous performance tests of the kiln or in-line kiln/raw mill exhaust and the alkali bypass. You may conduct a performance test of the alkali bypass exhaust when the raw mill of the in-line kiln/raw mill is operating or not operating.

(i) Each performance test must consist of three separate runs conducted under representative conditions. The duration of each run must be at least 3 hours, and the sample volume for each run must be at least 2.5 dscm (90 dscf).

(ii) The temperature at the inlet to the kiln or in-line kiln/raw mill PMCD, and, where applicable, the temperature at the inlet to the alkali bypass PMCD must be continuously recorded during the period of the Method 23 test, and the continuous temperature record(s) must be included in the performance test report.

(iii) Average temperatures must be calculated for each run of the performance test.

(iv) The run average temperature must be calculated for each run, and the average of the run average temperatures must be determined and included in the performance test report and will determine the applicable temperature limit in accordance with §63.1346(b), footnote 2.

(v)(A) If sorbent injection is used for D/F control, you must record the rate of sorbent injection to the kiln exhaust, and where applicable, the rate of sorbent injection to the alkali bypass exhaust, continuously during the period of the Method 23 test in accordance with the conditions in §63.1350(m)(9), and include the continuous injection rate record(s) in the performance test report. Determine the sorbent injection rate parameters in accordance with paragraph (b)(3)(vi) of this section.

(B) Include the brand and type of sorbent used during the performance test in the performance test report.

(C) Maintain a continuous record of either the carrier gas flow rate or the carrier gas pressure drop for the duration of the performance test. If the carrier gas flow rate is used, determine, record, and maintain a record of the accuracy of the carrier gas flow rate monitoring system according to the procedures in appendix A to part 75 of this chapter. If the carrier gas pressure drop is used, determine, record, and maintain a record of the accuracy of the carrier gas pressure drop monitoring system according to the procedures in §63.1350(m)(6).

(vi) Calculate the run average sorbent injection rate for each run and determine and include the average of the run average injection rates in the performance test report and determine the applicable injection rate limit in accordance with §63.1346(c)(1).

(4) *THC emissions test.* (i) If you are subject to limitations on THC emissions, you must operate a CEMS in accordance with the requirements in §63.1350(i). For the purposes of conducting the accuracy and quality assurance evaluations for CEMS, the THC span value (as propane) is 50 ppmvw and the reference method (RM) is Method 25A of appendix A to part 60 of this chapter.

(ii) Use the THC CEMS to conduct the initial compliance test for the first 30 kiln operating days of kiln operation after the compliance date of the rule. See §63.1348(a).

(iii) If kiln gases are diverted through an alkali bypass or to a coal mill and exhausted through a separate stack, you must calculate a kiln-specific THC limit using Equation 9:

$$C_{ks} = \frac{(MACT \text{ limit} \times (Q_{ab} + Q_{cm} + Q_{ks})) - (Q_{ab} \times C_{ab}) - (Q_{cm} \times C_{cm})}{Q_{ks}} \quad (\text{Eq. 9})$$

Where:

$C_{ks}$  = Kiln stack concentration (ppmvd).

$Q_{ab}$  = Alkali bypass flow rate (volume/hr).

$C_{ab}$  = Alkali bypass concentration (ppmvd).

$Q_{cm}$  = Coal mill flow rate (volume/hr).

$C_{cm}$  = Coal mill concentration (ppmvd).

Q<sub>ks</sub> = Kiln stack flow rate (volume/hr).

(iv) THC must be measured either upstream of the coal mill or the coal mill stack.

(v) Instead of conducting the performance test specified in paragraph (b)(4) of this section, you may conduct a performance test to determine emissions of total organic HAP by following the procedures in paragraph (b)(7) of this section.

(5) *Mercury Emissions Tests.* If you are subject to limitations on mercury emissions, you must operate a mercury CEMS or a sorbent trap monitoring system in accordance with the requirements of §63.1350(k). The initial compliance test must be based on the first 30 kiln operating days in which the affected source operates using a mercury CEMS or a sorbent trap monitoring system after the compliance date of the rule. See §63.1348(a).

(i) If you are using a mercury CEMS or a sorbent trap monitoring system, you must install, operate, calibrate, and maintain an instrument for continuously measuring and recording the exhaust gas flow rate to the atmosphere according to the requirements in §63.1350(k)(5).

(ii) Calculate the emission rate using Equation 10 of this section:

$$E_{30D} = k \frac{\sum_{i=1}^n C_i Q_i}{P} \quad (\text{Eq. 10})$$

Where:

E<sub>30D</sub> = 30-day rolling emission rate of mercury, lb/MM tons clinker.

C<sub>i</sub> = Concentration of mercury for operating hour i, µg/scm.

Q<sub>i</sub> = Volumetric flow rate of effluent gas for operating hour i, where C<sub>i</sub> and Q<sub>i</sub> are on the same basis (either wet or dry), scm/hr.

k = Conversion factor, 1 lb/454,000,000 µg.

n = Number of kiln operating hours in the previous 30 kiln operating day period where both C and Q<sub>i</sub> qualified data are available.

P = Total runs from the previous 30 days of clinker production during the same time period as the mercury emissions measured, million tons.

(7) *Total Organic HAP Emissions Tests.* Instead of conducting the performance test specified in paragraph (b)(4) of this section, you may conduct a performance test to determine emissions of total organic HAP by following the procedures in paragraphs (b)(7)(i) through (v) of this section.

(i) Use Method 320 of appendix A to this part, Method 18 of Appendix A of part 60, ASTM D6348-03 or a combination to determine emissions of total organic HAP. Each performance test must consist of three separate runs under the conditions that exist when the affected source is operating at the

representative performance conditions in accordance with §63.7(e). Each run must be conducted for at least 1 hour.

(ii) At the same time that you are conducting the performance test for total organic HAP, you must also determine a site-specific THC emissions limit by operating a THC CEMS in accordance with the requirements of §63.1350(j). The duration of the performance test must be at least 3 hours and the average THC concentration (as calculated from the recorded output) during the 3-hour test must be calculated. You must establish your THC operating limit and determine compliance with it according to paragraphs (b)(7)(vii) and (viii) of this section. It is permissible to extend the testing time of the organic HAP performance test if you believe extended testing is required to adequately capture organic HAP and/or THC variability over time.

(iii) If your source has an in-line kiln/raw mill you must use the fraction of time the raw mill is on and the fraction of time that the raw mill is off and calculate this limit as a weighted average of the THC levels measured during three raw mill on and three raw mill off tests.

(iv) If your organic HAP emissions are below 75 percent of the organic HAP standard and you determine your operating limit with paragraph (b)(7)(vii) of this section your THC CEMS must be calibrated and operated on a measurement scale no greater than 180 ppmvw, as carbon, or 60 ppmvw as propane.

(v) If your kiln has an inline coal mill and/or an alkali bypass with separate stacks, you are required to measure and account for oHAP emissions from their separate stacks. You are required to measure oHAP at the coal mill inlet or outlet and you must also measure oHAP at the alkali bypass outlet. You must then calculate a flow weighted average oHAP concentration for all emission sources including the inline coal mill and the alkali bypass.

(vi) Your THC CEMS measurement scale must be capable of reading THC concentrations from zero to a level equivalent to two times your highest THC emissions average determined during your performance test, including mill on or mill off operation. **Note:** This may require the use of a dual range instrument to meet this requirement and paragraph (b)(7)(iv) of this section.

(vii) Determine your operating limit as specified in paragraphs (b)(7)(viii) and (ix) of this section. If your organic HAP performance test demonstrates your average organic HAP emission levels are below 75 percent of your emission limit (9 ppmv) you will use the average THC value recorded during the organic HAP performance test, and the average total organic HAP result of your performance test to establish your operating limit. If your organic HAP compliance test results demonstrate that your average organic HAP emission levels are at or above 75 percent of your emission limit, your operating limit is established as the average THC value recorded during the organic HAP performance test. You must establish a new operating limit after each performance test. You must repeat the performance test no later than 30 months following your last performance test and reassess and adjust the site-specific operating limit in accordance with the results of the performance test.

(viii) If the average organic HAP results for your three Method 18 and/or Method 320 performance test runs are below 75 percent of your organic HAP emission limit, you must calculate an operating limit by establishing a relationship of THC CEMS signal to the organic HAP concentration using the average THC CEMS value corresponding to the three organic HAP compliance test runs and the average organic HAP total concentration from the Method 18 and/or Method 320 performance test runs with the procedures in (b)(7)(viii)(A) and (B) of this section.

(A) Determine the THC CEMS average values in ppmvw, and the average of your corresponding three total organic HAP compliance test runs, using Equation 12.

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n X_i, \bar{y} = \frac{1}{n} \sum_{i=1}^n Y_i \quad (\text{Eq. 12})$$

Where:

$\bar{x}$  = The THC CEMS average values in ppmvw.

$X_i$  = The THC CEMS data points for all three runs i.

$Y_i$  = The sum of organic HAP concentrations for test runs i. and

n = The number of data points.

(B) You must use your three run average THC CEMS value and your three run average organic HAP concentration from your three Method 18 and/or Method 320 compliance tests to determine the operating limit. Use equation 13 to determine your operating limit in units of ppmvw THC, as propane.

$$T_l = \left( \frac{9}{Y_1} \right) * X_1 \quad (\text{Eq. 13})$$

Where:

$T_l$  = The 30-day operating limit for your THC CEMS, ppmvw.

$Y_1$  = The average organic HAP concentration from Eq. 12, ppmvd.

$X_1$  = The average THC CEMS concentration from Eq. 12, ppmvw.

(ix) If the average of your three organic HAP performance test runs is at or above 75 percent of your organic HAP emission limit, you must determine your operating limit using Equation 14 by averaging the THC CEMS output values corresponding to your three organic HAP performance test runs that demonstrate compliance with the emission limit. If your new THC CEMS value is below your current operating limit, you may opt to retain your current operating limit, but you must still submit all performance test and THC CEMS data according to the reporting requirements in paragraph (d)(1) of this section.

$$T_h = \frac{1}{n} \sum_{i=1}^n X_i \quad (\text{Eq. 14})$$

Where:

$X_i$  = The THC CEMS data points for all runs i.

n = The number of data points.

T<sub>h</sub> = Your site specific operating limit, in ppmvw THC.

(x) If your kiln has an inline kiln/raw mill, you must conduct separate performance tests while the raw mill is operating (“mill on”) and while the raw mill is not operating (“mill off”). Using the fraction of time the raw mill is on and the fraction of time that the raw mill is off, calculate this limit as a weighted average of the THC levels measured during raw mill on and raw mill off compliance testing with Equation 15.

$$R = (y * t) + (x * (1 - t)) \quad (\text{Eq. 15})$$

Where:

R = Operating limit as THC, ppmvw.

y = Average THC CEMS value during mill on operations, ppmvw.

t = Percentage of operating time with mill on.

x = Average THC CEMS value during mill off operations, ppmvw.

(1-t) = Percentage of operating time with mill off.

(xi) To determine continuous compliance with the THC operating limit, you must record the THC CEMS output data for all periods when the process is operating and the THC CEMS is not out-of-control. You must demonstrate continuous compliance by using all quality-assured hourly average data collected by the THC CEMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (ppmvw) on a 30 operating day rolling average basis, updated at the end of each new kiln operating day. Use Equation 16 to determine the 30 kiln operating day average.

$$30 \text{ kiln operating day} = \frac{\sum_{i=1}^n Hpvi}{n} \quad (\text{Eq. 16})$$

Where:

Hpvi = The hourly parameter value for hour i, ppmvw.

n = The number of valid hourly parameter values collected over 30 kiln operating days.

(xii) Use EPA Method 18 or Method 320 of appendix A to part 60 of this chapter to determine organic HAP emissions. For each performance test, conduct at least three separate runs under the conditions that exist when the affected source is operating at the level reasonably expected to occur. If your source has an in-line kiln/raw mill you must conduct three separate test runs with the raw mill on, and three separate runs under the conditions that exist when the affected source is operating at the level reasonably expected to occur with the mill off. Conduct each Method 18 test run to collect a minimum



target sample equivalent to three times the method detection limit. Calculate the average of the results from three runs to determine compliance.

(xiii) If the THC level exceeds by 10 percent or more your site-specific THC emissions limit, you must

(A) As soon as possible but no later than 30 days after the exceedance, conduct an inspection and take corrective action to return the THC CEMS measurements to within the established value; and

(B) Within 90 days of the exceedance or at the time of the 30 month compliance test, whichever comes first, conduct another performance test to determine compliance with the organic HAP limit and to verify or re-establish your site-specific THC emissions limit.

**Performance Testing Requirements – Pollutant Specific Requirements for HCl:** 63.1349(b)(6), (8)

**§63.1349 Performance testing requirements.**

(b) \* \* \*

(6) *HCl emissions tests.* For a source subject to limitations on HCl emissions you must conduct performance testing by one of the following methods:

(i)(A) If the source is equipped with a wet scrubber, tray tower or dry scrubber, you must conduct performance testing using Method 321 of appendix A to this part unless you have installed a CEMS that meets the requirements §63.1350(l)(1). For kilns with inline raw mills, testing should be conducted for the raw mill on and raw mill off conditions.

(B) You must establish site specific parameter limits by using the CPMS required in §63.1350(l)(1). For a wet scrubber or tray tower, measure and record the pressure drop across the scrubber and/or liquid flow rate and pH in intervals of no more than 15 minutes during the HCl test. Compute and record the 24-hour average pressure drop, pH, and average scrubber water flow rate for each sampling run in which the applicable emissions limit is met. For a dry scrubber, measure and record the sorbent injection rate in intervals of no more than 15 minutes during the HCl test. Compute and record the 24-hour average sorbent injection rate and average sorbent injection rate for each sampling run in which the applicable emissions limit is met.

(ii)(A) If the source is not controlled by a wet scrubber, tray tower or dry sorbent injection system, you must operate a CEMS in accordance with the requirements of §63.1350(l)(1). See §63.1348(a).

(B) The initial compliance test must be based on the 30 kiln operating days that occur after the compliance date of this rule in which the affected source operates using an HCl CEMS. Hourly HCl concentration data must be obtained according to §63.1350(l).

(iii) As an alternative to paragraph (b)(6)(i)(B) of this section, you may choose to monitor SO<sub>2</sub> emissions using a CEMS in accordance with the requirements of §63.1350(l)(3). You must establish an SO<sub>2</sub> operating limit equal to the average recorded during the HCl stack test where the HCl stack test run result demonstrates compliance with the emission limit. This operating limit will apply only for demonstrating HCl compliance.

(iv) If kiln gases are diverted through an alkali bypass or to a coal mill and exhausted through a separate stack, you must calculate a kiln-specific HCl limit using Equation 11:

$$C_{ks} = \frac{(MACT \text{ Limit} \times (Q_{ab} + Q_{cm} + Q_{ks})) - (Q_{ab} \times C_{ab}) - (Q_{cm} \times C_{cm})}{Q_{ks}} \quad (\text{Eq. 11})$$

Where:

$C_{ks}$  = Kiln stack concentration (ppmvd).

$Q_{ab}$  = Alkali bypass flow rate (volume/hr).

$C_{ab}$  = Alkali bypass concentration (ppmvd).

$Q_{cm}$  = Coal mill flow rate (volume/hr).

$C_{cm}$  = Coal mill concentration (ppmvd).

$Q_{ks}$  = Kiln stack flow rate (volume/hr).

(8) *HCl Emissions Tests with SO<sub>2</sub> Monitoring.* If you choose to monitor SO<sub>2</sub> emissions using a CEMS to demonstrate HCl compliance, follow the procedures in (b)(8)(i) through (ix) of this section and in accordance with the requirements of §63.1350(l)(3). You must establish an SO<sub>2</sub> operating limit equal to the average recorded during the HCl stack test. This operating limit will apply only for demonstrating HCl compliance.

(i) Use Method 321 of appendix A to this part to determine emissions of HCl. Each performance test must consist of three separate runs under the conditions that exist when the affected source is operating at the representative performance conditions in accordance with §63.7(e). Each run must be conducted for at least one hour.

(ii) At the same time that you are conducting the performance test for HCl, you must also determine a site-specific SO<sub>2</sub> emissions limit by operating an SO<sub>2</sub> CEMS in accordance with the requirements of §63.1350(l). The duration of the performance test must be three hours and the average SO<sub>2</sub> concentration (as calculated from the average output) during the 3-hour test must be calculated. You must establish your SO<sub>2</sub> operating limit and determine compliance with it according to paragraphs (b)(8)(vii) and (viii) of this section.

(iii) If your source has an in-line kiln/raw mill you must use the fraction of time the raw mill is on and the fraction of time that the raw mill is off and calculate this limit as a weighted average of the SO<sub>2</sub> levels measured during raw mill on and raw mill off testing.

(iv) Your SO<sub>2</sub> CEMS must be calibrated and operated according to the requirements of §60.63(f).

(v) Your SO<sub>2</sub> CEMS measurement scale must be capable of reading SO<sub>2</sub> concentrations consistent with the requirements of §60.63(f), including mill on or mill off operation.

(vi) If your kiln has an inline kiln/raw mill, you must conduct separate performance tests while the raw mill is operating (“mill on”) and while the raw mill is not operating (“mill off”). Using the fraction of time the raw mill is on and the fraction of time that the raw mill is off, calculate this limit as a weighted average of the HCl levels measured during raw mill on and raw mill off compliance testing with Equation 17.

$$R = (y * t) + x * (t - 1) \quad (\text{Eq. 17})$$

Where:

R = Operating limit as SO<sub>2</sub>, ppmvw.

y = Average SO<sub>2</sub> CEMS value during mill on operations, ppmvw.

t = Percentage of operating time with mill on, expressed as a decimal.

x = Average SO<sub>2</sub> CEMS value during mill off operations, ppmvw.

t-1 = Percentage of operating time with mill off, expressed as a decimal.

(vii) If the average of your three HCl compliance test runs is below 75 percent of your HCl emission limit, you may as a compliance alternative, calculate an operating limit by establishing a relationship of SO<sub>2</sub> CEMS signal to your HCl concentration corrected to 7 percent O<sub>2</sub> by using the SO<sub>2</sub> CEMS instrument zero, the average SO<sub>2</sub> CEMS values corresponding to the three compliance test runs, and the average HCl concentration from the HCl compliance test with the procedures in (b)(8)(vii)(A) through (D) of this section.

(A) Determine your SO<sub>2</sub> CEMS instrument zero output with one of the following procedures:

(1) Zero point data for in-situ instruments should be obtained by removing the instrument from the stack and monitoring ambient air on a test bench.

(2) Zero point data for extractive instruments may be obtained by removing the extractive probe from the stack and drawing in clean ambient air.

(3) The zero point may also be established by performing probe-flood introduction of high purity nitrogen or certified zero air free of SO<sub>2</sub>.

(4) If none of the steps in paragraphs (b)(8)(vii)(A)(1) through (3) of this section are possible, you must use a zero output value provided by the manufacturer.

(B) Determine your SO<sub>2</sub> CEMS instrument average ppm, and the average of your corresponding three HCl compliance test runs, using equation 18.

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n X_i, \bar{y} = \sum_{i=1}^n Y_i \quad (\text{Eq. 18})$$

Where:

X<sub>1</sub> = The SO<sub>2</sub> CEMS data points for the three runs constituting the performance test.

Y<sub>1</sub> = The HCl emission concentration expressed as ppmv corrected to 7 percent O<sub>2</sub> for the three runs constituting the performance test.

n = The number of data points.

(C) With your instrument zero expressed in ppmv, your three run average SO<sub>2</sub> CEMS expressed in ppmv, and your three run HCl compliance test average in ppm corrected to 7 percent O<sub>2</sub>, determine a relationship of ppm HCl corrected to 7 percent O<sub>2</sub> per ppm SO<sub>2</sub> with Equation 19.

$$R = \frac{Y_1}{(X_1 - z)} \quad (\text{Eq. 19})$$

Where:

R = The relative HCl ppmv corrected to 7 percent O<sub>2</sub> per ppm SO<sub>2</sub> for your SO<sub>2</sub> CEMS.

Y<sub>1</sub> = The three run average HCl concentration corrected to 7 percent O<sub>2</sub>.

X<sub>1</sub> = The three run average ppm recorded by your SO<sub>2</sub> CEMS.

z = The instrument zero output ppm value.

(D) Determine your source specific 30-day rolling average operating limit using ppm HCl corrected to 7 percent O<sub>2</sub> per ppm SO<sub>2</sub> value from Equation 19 in Equation 20, below. This sets your operating limit at the SO<sub>2</sub> CEMS ppm value corresponding to 75 percent of your emission limit.

$$O_1 = z + \frac{0.75 (L)}{R} \quad (\text{Eq. 20})$$

Where:

O<sub>1</sub> = The operating limit for your SO<sub>2</sub> CEMS on a 30-day rolling average, in ppmv.

L = Your source HCl emission limit expressed in ppmv corrected to 7 percent O<sub>2</sub>.

z = Your instrument zero in ppmv, determined from (1)(i).

R = The relative oxygen corrected ppmv HCl per ppmv SO<sub>2</sub>, for your SO<sub>2</sub> CEMS, from Equation 19.

(viii) To determine continuous compliance with the SO<sub>2</sub> operating limit, you must record the SO<sub>2</sub> CEMS output data for all periods when the process is operating and the SO<sub>2</sub> CEMS is not out-of-control. You must demonstrate continuous compliance by using all quality-assured hourly average data collected by the SO<sub>2</sub> CEMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (ppmvw) on a 30 operating day rolling average basis, updated at the end of each new kiln operating day. Use Equation 21 to determine the 30 kiln operating day average.

$$30 \text{ kiln operating day} = \frac{\sum_{i=1}^n Hpvi}{n} \quad (\text{Eq. 21})$$

Where:

$Hpvi$  = The hourly parameter value for hour  $i$ , ppmvw.

$n$  = The number of valid hourly parameter values collected over 30 kiln operating days.

(ix) Use EPA Method 321 of appendix A to part 60 of this chapter to determine HCl emissions. For each performance test, conduct at least three separate runs under the conditions that exist when the affected source is operating at the level reasonably expected to occur. If your source has an in-line kiln/raw mill you must conduct three separate test runs with the raw mill on, and three separate runs under the conditions that exist when the affected source is operating at the level reasonably expected to occur with the mill off.

(x) If the  $SO_2$  level exceeds by 10 percent or more your site-specific  $SO_2$  emissions limit, you must:

(A) As soon as possible but no later than 30 days after the exceedance, conduct an inspection and take corrective action to return the  $SO_2$  CEMS measurements to within the established value;

(B) Within 90 days of the exceedance or at the time of the periodic compliance test, whichever comes first, conduct another performance test to determine compliance with the HCl limit and to verify or re-establish your site-specific  $SO_2$  emissions limit.

#### **Performance Testing Requirements – Frequency:** 63.1349(c)

##### **§63.1349 Performance testing requirements.**

(c) *Performance test frequency.* Except as provided in §63.1348(b), performance tests are required at regular intervals for affected sources that are subject to a dioxin, organic HAP or HCl emissions limit. Performance tests required every 30 months must be completed no more than 31 calendar months after the previous performance test except where that specific pollutant is monitored using CEMS; performance tests required every 12 months must be completed no more than 13 calendar months after the previous performance test.

#### **Monitoring – PM:** 63.1350(b)

##### **§63.1350 Monitoring requirements.**

(b) *PM monitoring requirements.* (1)(i) *PM CPMS.* You will use a PM CPMS to establish a site-specific operating limit corresponding to the results of the performance test demonstrating compliance with the PM limit. You will conduct your performance test using Method 5 or Method 5I at appendix A-3 to part 60 of this chapter. You will use the PM CPMS to demonstrate continuous compliance with this operating limit. You must repeat the performance test annually and reassess and adjust the site-specific operating limit in accordance with the results of the performance test using the procedures in §63.1349(b)(1) (i) through (vi) of this subpart. You must also repeat the test if you change the analytical

range of the instrument, or if you replace the instrument itself or any principle analytical component of the instrument that would alter the relationship of output signal to in-stack PM concentration.

(ii) To determine continuous compliance, you must use the PM CPMS output data for all periods when the process is operating and the PM CPMS is not out-of-control. You must demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (milliamps) on a 30 operating day rolling average basis, updated at the end of each new kiln operating day.

(iii) For any exceedance of the 30 process operating day PM CPMS average value from the established operating parameter limit, you must:

(A) Within 48 hours of the exceedance, visually inspect the APCD;

(B) If inspection of the APCD identifies the cause of the exceedance, take corrective action as soon as possible and return the PM CPMS measurement to within the established value; and

(C) Within 30 days of the exceedance or at the time of the annual compliance test, whichever comes first, conduct a PM emissions compliance test to determine compliance with the PM emissions limit and to verify or re-establish the PM CPMS operating limit within 45 days. You are not required to conduct additional testing for any exceedances that occur between the time of the original exceedance and the PM emissions compliance test required under this paragraph.

(iv) PM CPMS exceedances leading to more than four required performance tests in a 12-month process operating period (rolling monthly) constitute a presumptive violation of this subpart.

(2) [Reserved]

#### **Monitoring – D/F:** 63.1350(g)

#### **§63.1350 Monitoring requirements.**

(g) *D/F monitoring requirements.* If you are subject to an emissions limitation on D/F emissions, you must comply with the monitoring requirements of paragraphs (g)(1) through (g)(6) and paragraphs (m)(1) through (m)(4) of this section to demonstrate continuous compliance with the D/F emissions standard. You must also develop an emissions monitoring plan in accordance with paragraphs (p)(1) through (p)(4) of this section.

(1) You must install, calibrate, maintain, and continuously operate a CMS to record the temperature of the exhaust gases from the kiln and alkali bypass, if applicable, at the inlet to, or upstream of, the kiln and/or alkali bypass PMCDs.

(i) The temperature recorder response range must include zero and 1.5 times the average temperature established according to the requirements in §63.1349(b)(3)(iv).

(ii) The calibration reference for the temperature measurement must be a National Institute of Standards and Technology calibrated reference thermocouple-potentiometer system or alternate reference, subject to approval by the Administrator.

(iii) The calibration of all thermocouples and other temperature sensors must be verified at least once every three months.

(2) You must monitor and continuously record the temperature of the exhaust gases from the kiln and alkali bypass, if applicable, at the inlet to the kiln and/or alkali bypass PMCD.

(3) The required minimum data collection frequency must be one minute.

(4) Calculate the rolling three-hour average temperature using the average of 180 successive one-minute average temperatures. See §63.1349(b)(3).

(5) When the operating status of the raw mill of the in-line kiln/raw mill is changed from off to on or from on to off, the calculation of the three-hour rolling average temperature must begin anew, without considering previous recordings.

**Monitoring – Sorbent Injection:** 63.1350(h)

**§63.1350 Monitoring requirements.**

(h) *Monitoring requirements for sources using sorbent injection.* If you are subject to an operating limit on D/F emissions that employs carbon injection as an emission control technique, you must comply with the additional monitoring requirements of paragraphs (h)(1) and (h)(2) and paragraphs (m)(1) through (m)(4) and (m)(9) of this section. You must also develop an emissions monitoring plan in accordance with paragraphs (p)(1) through (p)(4) of this section.

(1) Install, operate, calibrate, and maintain a continuous monitor to record the rate of activated carbon injection. The accuracy of the rate measurement device must be  $\pm 1$  percent of the rate being measured.

(i) Verify the calibration of the device at least once every three months.

(ii) Each hour, calculate the three-hour rolling average activated carbon injection rate for the previous three hours of process operation. See §63.1349(b)(3).

(iii) When the operating status of the raw mill of the in-line kiln/raw mill is changed from off to on or from on to off, the calculation of the three-hour rolling average activated carbon injection rate must begin anew, without considering previous recordings.

(2)(i) Install, operate, calibrate, and maintain a continuous monitor to record the activated carbon injection system carrier gas parameter (either the carrier gas flow rate or the carrier gas pressure drop) established during the D/F performance test in accordance with §63.1349(b)(3).

(ii) Each hour, calculate the three-hour rolling average of the selected parameter value for the previous 3 hours of process operation using all of the one-minute data available (*i.e.*, the CMS is not out-of-control.)

**Monitoring – THC:** 63.1350(i)

**§63.1350 Monitoring requirements.**

(i) *THC Monitoring Requirements.* If you are subject to an emissions limitation on THC emissions, you must comply with the monitoring requirements of paragraphs (i)(1) and (i)(2) and (m)(1) through (m)(4) of this section. You must also develop an emissions monitoring plan in accordance with paragraphs (p)(1) through (p)(4) of this section.

(1) You must install, operate, and maintain a THC continuous emission monitoring system in accordance with Performance Specification 8 or Performance Specification 8A of appendix B to part 60 of this chapter and comply with all of the requirements for continuous monitoring systems found in the general provisions, subpart A of this part. The owner or operator must operate and maintain each CEMS according to the quality assurance requirements in Procedure 1 of appendix F in part 60 of this chapter. For THC continuous emission monitoring systems certified under Performance Specification 8A, conduct the relative accuracy test audits required under Procedure 1 in accordance with Performance Specification 8, Sections 8 and 11 using Method 25A in appendix A to 40 CFR part 60 as the reference method; the relative accuracy must meet the criteria of Performance Specification 8, Section 13.2.

(2) Performance tests on alkali bypass and coal mill stacks must be conducted using Method 25A in appendix A to 40 CFR part 60 and repeated every 30 months.

**Monitoring – Total Organic HAP:** 63.1350(j)

**§63.1350 Monitoring requirements.**

(j) *Total organic HAP monitoring requirements.* If you are complying with the total organic HAP emissions limits, you must continuously monitor THC according to paragraph (i)(1) and (2) of this section or in accordance with Performance Specification 8 or Performance Specification 8A of appendix B to part 60 of this chapter and comply with all of the requirements for continuous monitoring systems found in the general provisions, subpart A of this part. You must operate and maintain each CEMS according to the quality assurance requirements in Procedure 1 of appendix F in part 60 of this chapter. In addition, you must follow the monitoring requirements in paragraphs (m)(1) through (4) of this section. You must also develop an emissions monitoring plan in accordance with paragraphs (p)(1) through (4) of this section.

**Monitoring – Mercury:** 63.1350(k)

**§63.1350 Monitoring requirements.**

(k) *Mercury monitoring requirements.* If you have a kiln subject to an emissions limitation on mercury emissions, you must install and operate a mercury continuous emissions monitoring system (Hg CEMS) in accordance with Performance Specification 12A (PS 12A) of appendix B to part 60 of this chapter or an integrated sorbent trap monitoring system in accordance with Performance Specification 12B (PS 12B) of appendix B to part 60 of this chapter. You must monitor mercury continuously according to paragraphs (k)(1) through (5) of this section. You must also develop an emissions monitoring plan in accordance with paragraphs (p)(1) through (4) of this section.

(1) You must use a span value for any Hg CEMS that represents the mercury concentration corresponding to approximately two times the emissions standard and may be rounded up to the nearest multiple of  $5 \mu\text{g}/\text{m}^3$  of total mercury or higher level if necessary to include Hg concentrations which may occur (excluding concentrations during in-line raw “mill off” operation). As specified in PS 12A, Section 6.1.1, the data recorder output range must include the full range of expected Hg concentration values which would include those expected during “mill off” conditions. Engineering judgments made and calculations used to determine the corresponding span concentration from the emission standard shall be documented in the site-specific monitoring plan and associated records.

(2) In order to quality assure data measured above the span value, you must use one of the three options in paragraphs (k)(2)(i) through (iii) of this section. Where the options in paragraphs (k)(2)(i) through (iii) are employed while the kiln is operating in a mill-off mode, the “above span” described in



paragraph (k)(2)(iii) may substitute for the daily upscale calibration provided the data normalization process in paragraph (k)(2)(iii) are not required. If data normalization is required, the normal daily upscale calibration check must be performed to quality assure the operation of the CEMS for that day. In this particular case, adjustments to CEMS normally required by Procedure 5 when a daily upscale does not meet the 5 percent criterion are not required, unless paragraph (k)(2)(iii) of this section data normalization is necessary and a subsequent normal daily calibration check demonstrates the need for such adjustment.

(i) Include a second span that encompasses the Hg emission concentrations expected to be encountered during “mill off” conditions. This second span may be rounded to a multiple of 5 µg/m<sup>3</sup> of total mercury. The requirements of PS 12A, shall be followed for this second span with the exception that a RATA with the mill off is not required.

(ii) Quality assure any data above the span value by proving instrument linearity beyond the span value established in paragraph (k)(1) of this section using the following procedure. Conduct a weekly “above span linearity” calibration challenge of the monitoring system using a reference gas with a certified value greater than your highest expected hourly concentration or greater than 75 percent of the highest measured hourly concentration. The “above span” reference gas must meet the requirements of PS 12A, Section 7.1 and must be introduced to the measurement system at the probe. Record and report the results of this procedure as you would for a daily calibration. The “above span linearity” challenge is successful if the value measured by the Hg CEMS falls within 10 percent of the certified value of the reference gas. If the value measured by the Hg CEMS during the above span linearity challenge exceeds ±10 percent of the certified value of the reference gas, the monitoring system must be evaluated and repaired and a new “above span linearity” challenge met before returning the Hg CEMS to service, or data above span from the Hg CEMS must be subject to the quality assurance procedures established in paragraph (k)(2)(iii) of this section. In this manner all hourly average values exceeding the span value measured by the Hg CEMS during the week following the above span linearity challenge when the CEMS response exceeds ±20 percent of the certified value of the reference gas must be normalized using Equation 22.

$$\frac{\text{Certified reference gas value}}{\text{Measured value of reference gas}} \times \text{Measured stack gas result} \quad (\text{Eq. 22})$$

$$= \text{Normalized stack gas result}$$

(iii) Quality assure any data above the span value established in paragraph (k)(1) of this section using the following procedure. Any time two consecutive one-hour average measured concentrations of Hg exceeds the span value you must, within 24 hours before or after, introduce a higher, “above span” Hg reference gas standard to the Hg CEMS. The “above span” reference gas must meet the requirements of PS 12A, Section 7.1, must target a concentration level between 50 and 150 percent of the highest expected hourly concentration measured during the period of measurements above span, and must be introduced at the probe. While this target represents a desired concentration range that is not always achievable in practice, it is expected that the intent to meet this range is demonstrated by the value of the reference gas. Expected values may include “above span” calibrations done before or after the above span measurement period. Record and report the results of this procedure as you would for a daily calibration. The “above span” calibration is successful if the value measured by the Hg CEMS is within 20 percent of the certified value of the reference gas. If the value measured by the Hg CEMS exceeds 20 percent of the certified value of the reference gas, then you must normalize the one-hour average stack gas values measured above the span during the 24-hour period preceding or following the “above span” calibration

for reporting based on the Hg CEMS response to the reference gas as shown in equation 22 below. Only one “above span” calibration is needed per 24 hour period.

(3) You must operate and maintain each Hg CEMS or an integrated sorbent trap monitoring system according to the quality assurance requirements in Procedure 5 of appendix F to part 60 of this chapter. During the RATA of integrated sorbent trap monitoring systems required under Procedure 5, you may apply the appropriate exception for sorbent trap section 2 breakthrough in (k)(3)(i) through (iv) of this section:

(i) For stack Hg concentrations  $>1 \mu\text{g/dscm}$ ,  $\leq 10\%$  of section 1 mass;

(ii) For stack Hg concentrations  $\leq 1 \mu\text{g/dscm}$  and  $>0.5 \mu\text{g/dscm}$ ,  $\leq 20\%$  of section 1 mass;

(iii) For stack Hg concentrations  $\leq 0.5 \mu\text{g/dscm}$  and  $>0.1 \mu\text{g/dscm}$ ,  $\leq 50\%$  of section 1 mass; and

(iv) For stack Hg concentrations  $\leq 0.1 \mu\text{g/dscm}$ , no breakthrough criterion assuming all other QA/QC specifications are met.

(4) Relative accuracy testing of mercury monitoring systems under PS 12A, PS 12B, or Procedure 5 must be conducted at normal operating conditions. If a facility has an inline raw mill, the testing must occur with the raw mill on.

(5) If you use a Hg CEMS or an integrated sorbent trap monitoring system, you must install, operate, calibrate, and maintain an instrument for continuously measuring and recording the exhaust gas flow rate to the atmosphere according to the requirements in paragraphs (n)(1) through (10) of this section. If kiln gases are diverted through an alkali bypass or to a coal mill and exhausted through separate stacks, you must account for the mercury emitted from those stacks by following the procedures in (k)(5)(i) through (iv) of this section:

(i) Develop a mercury hourly mass emissions rate by conducting performance tests annually, within 11 to 13 calendar months after the previous performance test, using Method 29, or Method 30B, to measure the concentration of mercury in the gases exhausted from the alkali bypass and coal mill.

(ii) On a continuous basis, determine the mass emissions of mercury in lb/hr from the alkali bypass and coal mill exhausts by using the mercury hourly emissions rate, the exhaust gas flow rate and hourly mercury emission rate to calculate hourly mercury emissions in lb/hr.

(iii) Sum the hourly mercury emissions from the kiln, alkali bypass and coal mill to determine total mercury emissions. Using hourly clinker production, calculate the hourly emissions rate in pounds per ton of clinker to determine your 30 day rolling average.

(iv) If mercury emissions from the coal mill and alkali bypass are below the method detection limit for two consecutive annual performance tests, you may reduce the frequency of the performance tests of coal mills and alkali bypasses to once every 30 months. If the measured mercury concentration exceeds the method detection limit, you must revert to testing annually until two consecutive annual tests are below the method detection limit.

(6) If you operate an integrated sorbent trap monitoring system conforming to PS 12B, you may use a monitoring period at least 24 hours but no longer than 168 hours in length. You should use a monitoring period that is a multiple of 24 hours (except during relative accuracy testing as allowed in PS 12B).

## **Monitoring – HCl: 63.1350(l)**

### **§63.1350 Monitoring requirements.**

(l) *HCl Monitoring Requirements.* If you are subject to an emissions limitation on HCl emissions in §63.1343, you must monitor HCl emissions continuously according to paragraph (l)(1) or (2) and paragraphs (m)(1) through (4) of this section or, if your kiln is controlled using a wet or dry scrubber or tray tower, you alternatively may parametrically monitor SO<sub>2</sub> emissions continuously according to paragraph (l)(3) of this section. You must also develop an emissions monitoring plan in accordance with paragraphs (p)(1) through (4) of this section.

(1) If you monitor compliance with the HCl emissions limit by operating an HCl CEMS, you must do so in accordance with Performance Specification 15 (PS 15) of appendix B to part 60 of this chapter, or, upon promulgation, in accordance with any other performance specification for HCl CEMS in appendix B to part 60 of this chapter. You must operate, maintain, and quality assure a HCl CEMS installed and certified under PS 15 according to the quality assurance requirements in Procedure 1 of appendix F to part 60 of this chapter except that the Relative Accuracy Test Audit requirements of Procedure 1 must be replaced with the validation requirements and criteria of sections 11.1.1 and 12.0 of PS 15. When promulgated, if you choose to install and operate an HCl CEMS in accordance with PS 18 of appendix B to part 60 of this chapter, you must operate, maintain and quality assure the HCl CEMS using the associated Procedure 6 of appendix F to part 60 of this chapter. For any performance specification that you use, you must use Method 321 of appendix A to part 63 of this chapter as the reference test method for conducting relative accuracy testing. The span value and calibration requirements in paragraphs (l)(1)(i) and (ii) of this section apply to HCl CEMS other than those installed and certified under PS 15.

(i) You must use a measurement span value for any HCl CEMS of 0-10 ppmvw unless the monitor is installed on a kiln without an inline raw mill. Kilns without an inline raw mill may use a higher span value sufficient to quantify all expected emissions concentrations. The HCl CEMS data recorder output range must include the full range of expected HCl concentration values which would include those expected during “mill off” conditions. The corresponding data recorder range shall be documented in the site-specific monitoring plan and associated records.

(ii) In order to quality assure data measured above the span value, you must use one of the three options in paragraphs (l)(1)(ii)(A) through (C) of this section.

(A) Include a second span that encompasses the HCl emission concentrations expected to be encountered during “mill off” conditions. This second span may be rounded to a multiple of 5 ppm of total HCl. The requirements of the appropriate HCl monitor performance specification shall be followed for this second span with the exception that a RATA with the mill off is not required.

(B) Quality assure any data above the span value by proving instrument linearity beyond the span value established in paragraph (l)(1)(i) of this section using the following procedure. Conduct a weekly “above span linearity” calibration challenge of the monitoring system using a reference gas with a certified value greater than your highest expected hourly concentration or greater than 75 percent of the highest measured hourly concentration. The “above span” reference gas must meet the requirements of the applicable performance specification and must be introduced to the measurement system at the probe. Record and report the results of this procedure as you would for a daily calibration. The “above span linearity” challenge is successful if the value measured by the HCl CEMS falls within 10 percent of the certified value of the reference gas. If the value measured by the HCl CEMS during the above span linearity challenge exceeds 10 percent of the certified value of the reference gas, the monitoring system must be evaluated and repaired and a new “above span linearity” challenge met before returning the HCl

CEMS to service, or data above span from the HCl CEMS must be subject to the quality assurance procedures established in paragraph (l)(1)(ii)(D) of this section. Any HCl CEMS above span linearity challenge response exceeding  $\pm 20$  percent of the certified value of the reference gas requires that all above span hourly averages during the week following the above span linearity challenge must be normalized using Equation 23.

(C) Quality assure any data above the span value established in paragraph (l)(1)(i) of this section using the following procedure. Any time two consecutive one-hour average measured concentration of HCl exceeds the span value you must, within 24 hours before or after, introduce a higher, “above span” HCl reference gas standard to the HCl CEMS. The “above span” reference gas must meet the requirements of the applicable performance specification and target a concentration level between 50 and 150 percent of the highest expected hourly concentration measured during the period of measurements above span, and must be introduced at the probe. While this target represents a desired concentration range that is not always achievable in practice, it is expected that the intent to meet this range is demonstrated by the value of the reference gas. Expected values may include above span calibrations done before or after the above-span measurement period. Record and report the results of this procedure as you would for a daily calibration. The “above span” calibration is successful if the value measured by the HCl CEMS is within 20 percent of the certified value of the reference gas. If the value measured by the HCl CEMS is not within 20 percent of the certified value of the reference gas, then you must normalize the stack gas values measured above span as described in paragraph (l)(1)(ii)(D) of this section.

(D) In the event that the “above span” calibration is not successful (*i.e.*, the HCl CEMS measured value is not within 20 percent of the certified value of the reference gas), then you must normalize the one-hour average stack gas values measured above the span during the 24-hour period preceding or following the ‘above span’ calibration for reporting based on the HCl CEMS response to the reference gas as shown in Equation 23:

$$\frac{\text{Certified reference gas value}}{\text{Measured value of reference gas}} \times \text{Measured stack gas result} \quad (\text{Eq. 23})$$

$$= \text{Normalized stack gas result}$$

Only one “above span” calibration is needed per 24-hour period.

(2) Install, operate, and maintain a CMS to monitor wet scrubber or tray tower parameters, as specified in paragraphs (m)(5) and (7) of this section, and dry scrubber, as specified in paragraph (m)(9) of this section.

(3) If the source is equipped with a wet or dry scrubber or tray tower, and you choose to monitor SO<sub>2</sub> emissions, monitor SO<sub>2</sub> emissions continuously according to the requirements of §60.63(e) and (f) of part 60 subpart F of this chapter. If SO<sub>2</sub> levels increase above the 30-day rolling average SO<sub>2</sub> operating limit established during your performance test, you must:

(i) As soon as possible but no later than 48 hours after you exceed the established SO<sub>2</sub> value conduct an inspection and take corrective action to return the SO<sub>2</sub> emissions to within the operating limit; and

(ii) Within 60 days of the exceedance or at the time of the next compliance test, whichever comes first, conduct an HCl emissions compliance test to determine compliance with the HCl emissions limit and to verify or re-establish the SO<sub>2</sub> CEMS operating limit.

**Monitoring – Parameter Monitoring:** 63.1350(m), (m)(1) - (9)

**§63.1350 Monitoring requirements.**

(m) *Parameter monitoring requirements.* If you have an operating limit that requires the use of a CMS, you must install, operate, and maintain each continuous parameter monitoring system (CPMS) according to the procedures in paragraphs (m)(1) through (4) of this section by the compliance date specified in §63.1351. You must also meet the applicable specific parameter monitoring requirements in paragraphs (m)(5) through (11) that are applicable to you.

(1) The CMS must complete a minimum of one cycle of operation for each successive 15-minute period. You must have a minimum of four successive cycles of operation to have a valid hour of data.

(2) You must conduct all monitoring in continuous operation at all times that the unit is operating.

(3) Determine the 1-hour block average of all recorded readings.

(4) Record the results of each inspection, calibration, and validation check.

(5) *Liquid flow rate monitoring requirements.* If you have an operating limit that requires the use of a flow measurement device, you must meet the requirements in paragraphs (m)(5)(i) through (iv) of this section.

(i) Locate the flow sensor and other necessary equipment in a position that provides a representative flow.

(ii) Use a flow sensor with a measurement sensitivity of 2 percent of the flow rate.

(iii) Reduce swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(iv) Conduct a flow sensor calibration check at least semiannually.

(6) *Specific pressure monitoring requirements.* If you have an operating limit that requires the use of a pressure measurement device, you must meet the requirements in paragraphs (m)(6)(i) through (vi) of this section.

(i) Locate the pressure sensor(s) in a position that provides a representative measurement of the pressure.

(ii) Minimize or eliminate pulsating pressure, vibration, and internal and external corrosion.

(iii) Use a gauge with a minimum tolerance of 1.27 centimeters of water or a transducer with a minimum tolerance of 1 percent of the pressure range.

(iv) Check pressure tap pluggage daily.

(v) Using a manometer, check gauge calibration quarterly and transducer calibration monthly.

(vi) Conduct calibration checks any time the sensor exceeds the manufacturer's specified maximum operating pressure range or install a new pressure sensor.

(7) *Specific pH monitoring requirements.* If you have an operating limit that requires the use of a pH measurement device, you must meet the requirements in paragraphs (m)(7)(i) through (iii) of this section.

(i) Locate the pH sensor in a position that provides a representative measurement of wet scrubber or tray tower effluent pH.

(ii) Ensure the sample is properly mixed and representative of the fluid to be measured.

(iii) Check the pH meter's calibration on at least two points every 8 hours of process operation.

(8) [Reserved]

(9) *Mass flow rate (for sorbent injection) monitoring requirements.* If you have an operating limit that requires the use of equipment to monitor sorbent injection rate (*e.g.*, weigh belt, weigh hopper, or hopper flow measurement device), you must meet the requirements in paragraphs (m)(9)(i) through (iii) of this section. These requirements also apply to the sorbent injection equipment of a dry scrubber.

(i) Locate the device in a position(s) that provides a representative measurement of the total sorbent injection rate.

(ii) Install and calibrate the device in accordance with manufacturer's procedures and specifications.

(iii) At least annually, calibrate the device in accordance with the manufacturer's procedures and specifications.

#### **Monitoring – Continuous Flow Rate:** 63.1350(n)

##### **§63.1350 Monitoring requirements.**

(n) *Continuous Flow Rate Monitoring System.* You must install, operate, calibrate, and maintain instruments, according to the requirements in paragraphs (n)(1) through (10) of this section, for continuously measuring and recording the stack gas flow rate to allow determination of the pollutant mass emissions rate to the atmosphere from sources subject to an emissions limitation that has a pounds per ton of clinker unit and that is required to be monitored by a CEMS.

(1) You must install each sensor of the flow rate monitoring system in a location that provides representative measurement of the exhaust gas flow rate at the sampling location of the mercury CEMS, taking into account the manufacturer's recommendations. The flow rate sensor is that portion of the system that senses the volumetric flow rate and generates an output proportional to that flow rate.

(2) The flow rate monitoring system must be designed to measure the exhaust flow rate over a range that extends from a value of at least 20 percent less than the lowest expected exhaust flow rate to a value of at least 20 percent greater than the highest expected exhaust flow rate.

(3) [Reserved]

(4) The flow rate monitoring system must be equipped with a data acquisition and recording system that is capable of recording values over the entire range specified in paragraph (n)(2) of this section.

(5) The signal conditioner, wiring, power supply, and data acquisition and recording system for the flow rate monitoring system must be compatible with the output signal of the flow rate sensors used in the monitoring system.

(6) The flow rate monitoring system must be designed to complete a minimum of one cycle of operation for each successive 15-minute period.

(7) The flow rate sensor must have provisions to determine the daily zero and upscale calibration drift (CD) (*see* sections 3.1 and 8.3 of Performance Specification 2 in appendix B to Part 60 of this chapter for a discussion of CD).

(i) Conduct the CD tests at two reference signal levels, zero (e.g., 0 to 20 percent of span) and upscale (e.g., 50 to 70 percent of span).

(ii) The absolute value of the difference between the flow monitor response and the reference signal must be equal to or less than 3 percent of the flow monitor span.

(8) You must perform an initial relative accuracy test of the flow rate monitoring system according to Section 8.2 of Performance Specification 6 of appendix B to part 60 of the chapter with the exceptions in paragraphs (n)(8)(i) and (n)(8)(ii) of this section.

(i) The relative accuracy test is to evaluate the flow rate monitoring system alone rather than a continuous emission rate monitoring system.

(ii) The relative accuracy of the flow rate monitoring system shall be no greater than 10 percent of the mean value of the reference method data.

(9) You must verify the accuracy of the flow rate monitoring system at least once per year by repeating the relative accuracy test specified in paragraph (n)(8).

(10) You must operate the flow rate monitoring system and record data during all periods of operation of the affected facility including periods of startup, shutdown, and malfunction, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments).

**Additional Test Methods for HCl as Part of Applicability Determination:** 63.1352(a)

**§63.1352 Additional test methods.**

(a) If you are conducting tests to determine the rates of emission of HCl from kilns and associated bypass stacks at portland cement manufacturing facilities, for use in applicability determinations under §63.1340, you may use Method 320 or Method 321 of appendix A of this part.

**Additional Test Methods for Organic HAP as Part of Applicability Determination:** 63.1352(b)

**§63.1352 Additional test methods.**

(b) Owners or operators conducting tests to determine the rates of emission of specific organic HAP from raw material dryers, and kilns at Portland cement manufacturing facilities, solely for use in

applicability determinations under §63.1340 of this subpart are permitted to use Method 320 of appendix A to this part, or Method 18 of appendix A to part 60 of this chapter.



## Portland Cement Manufacturing Industry NESHAP Requirements

### Existing Clinker Cooler

(Constructed on or before May 6, 2009)

**Applicability/Affected Sources:** 63.1340(b)(2)

#### **§63.1340 What parts of my plant does this subpart cover?**

(b) The affected sources subject to this subpart are:

(2) Each clinker cooler at any portland cement plant;

**Emission and Work Practice Standards – General:** 63.1343(a)

#### **§63.1343 What standards apply to my kilns, clinker coolers, raw material dryers, and open clinker storage piles?**

(a) General. The provisions in this section apply to each kiln and any alkali bypass associated with that kiln, clinker cooler, raw material dryer, and open clinker storage pile. All D/F, HCl, and total hydrocarbon (THC) emissions limit are on a dry basis. The D/F, HCl, and THC limits for kilns are corrected to 7 percent oxygen. All THC emissions limits are measured as propane. Standards for mercury and THC are based on a rolling 30-day average. If using a CEMS to determine compliance with the HCl standard, this standard is based on a rolling 30-day average. You must ensure appropriate corrections for moisture are made when measuring flow rates used to calculate mercury emissions. The 30-day period means all operating hours within 30 consecutive kiln operating days excluding periods of startup and shutdown. All emissions limits for kilns, clinker coolers, and raw material dryers currently in effect that are superseded by the limits below continue to apply until the compliance date of the limits below, or until the source certifies compliance with the limits below, whichever is earlier.

**Emission and Work Practice Standards – Emission Limits for PM:** 63.1343(b)(1), Table 1 #7

#### **§63.1343 What standards apply to my kilns, clinker coolers, raw material dryers, and open clinker storage piles?**

(b) Kilns, clinker coolers, raw material dryers, raw mills, and finish mills. (1) The emissions limits for these sources are shown in Table 1.

**Table 1—Emissions Limits for Kilns, Clinker Coolers, Raw Material Dryers, Raw and Finish Mills**

If your source is a (an):	And the operating mode is:	And if is located at a:	Your emissions limits are:	And the units of the emissions limit are:	The oxygen correction factor is:
7. Existing clinker cooler	Normal operation	Major or area source	PM 0.07	lb/ton clinker	NA.

**Emission and Work Practice Standards – Startup and Shutdown:** 63.1343(b)(1), Table 1 #8, 63.1348(b)(9)

**§63.1343 What standards apply to my kilns, clinker coolers, raw material dryers, and open clinker storage piles?**

(b) Kilns, clinker coolers, raw material dryers, raw mills, and finish mills. (1) The emissions limits for these sources are shown in Table 1.

**Table 1—Emissions Limits for Kilns, Clinker Coolers, Raw Material Dryers, Raw and Finish Mills**

<b>If your source is a (an):</b>	<b>And the operating mode is:</b>	<b>And if is located at a:</b>	<b>Your emissions limits are:</b>	<b>And the units of the emissions limit are:</b>	<b>The oxygen correction factor is:</b>
8. Existing clinker cooler	Startup and shutdown	Major or area source	Work practices (63.1348(b)(9))	NA	NA.

**§63.1348 Compliance requirements.**

(b) *Continuous Monitoring Requirements.* You must demonstrate compliance with the emissions standards and operating limits by using the performance test methods and procedures in §§63.1350 and 63.8 for each affected source.

(9) *Startup and Shutdown Compliance.* All dry sorbent and activated carbon systems that control hazardous air pollutants must be turned on and operating at the time the gas stream at the inlet to the baghouse or ESP reaches 300 degrees Fahrenheit (five minute average) during startup. Temperature of the gas stream is to be measured at the inlet of the baghouse or ESP every minute. Such injection systems can be turned off during shutdown. Particulate control and all remaining devices that control hazardous air pollutants should be operational during startup and shutdown.

**Operation and Maintenance Plan:** 63.1347

**§63.1347 Operation and maintenance plan requirements.**

(a) You must prepare, for each affected source subject to the provisions of this subpart, a written operations and maintenance plan. The plan must be submitted to the Administrator for review and approval as part of the application for a part 70 permit and must include the following information:

(1) Procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the emissions limits and operating limits, including fugitive dust control measures for open clinker piles of §§63.1343, 63.1345, and 63.1346. Your operations and maintenance plan must address periods of startup and shutdown.

(2) Corrective actions to be taken when required by paragraph §63.1350(f)(3);

(3) Procedures to be used during an inspection of the components of the combustion system of each kiln and each in-line kiln raw mill located at the facility at least once per year.

(b) Failure to comply with any provision of the operations and maintenance plan developed in accordance with this section is a violation of the standard.

**Compliance Requirements – Initial Performance Test Requirements:** 63.1348(a), (a)(1)

**§63.1348 Compliance requirements.**

(a) *Initial Performance Test Requirements.* For an affected source subject to this subpart, you must demonstrate compliance with the emissions standards and operating limits by using the test methods and procedures in §§63.1349 and 63.7. Any cement kiln that has been subject to the requirements of subpart CCCC or subpart DDDD of 40 CFR Part 60, and is now electing to cease burning nonhazardous solid waste and become subject to this subpart, must meet all the initial compliance testing requirements each time it becomes subject to this subpart, even if it was previously subject to this subpart.

NOTE TO PARAGRAPH (a): The first day of the 30 operating day performance test is the first day after the compliance date following completion of the field testing and data collection that demonstrates that the CPMS or CEMS has satisfied the relevant CPMS performance evaluation or CEMS performance specification (e.g., PS 2, 12A, or 12B) acceptance criteria. The performance test period is complete at the end of the 30th consecutive operating day. See §63.1341 for definition of operating day and §63.1348(b)(1) for the CEMS operating requirements. The source has the option of performing the compliance test earlier than the compliance date if desired.

(1) *PM Compliance.* If you are subject to limitations on PM emissions under §63.1343(b), you must demonstrate compliance with the PM emissions standards by using the test methods and procedures in §63.1349(b)(1).

**Compliance Requirements – Continuous Monitoring Requirements:** 63.1348(b), (b)(1)(i)-(iii), (2), (9)

**§63.1348 Compliance requirements.**

(b) *Continuous Monitoring Requirements.* You must demonstrate compliance with the emissions standards and operating limits by using the performance test methods and procedures in §§63.1350 and 63.8 for each affected source.

(1) *General Requirements.* (i) You must monitor and collect data according to §63.1350 and the site-specific monitoring plan required by §63.1350(p).

(ii) Except for periods of startup and shutdown, monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), you must operate the monitoring system and collect data at all required intervals at all times the affected source is operating.

(iii) You may not use data recorded during monitoring system startup, shutdown or malfunctions or repairs associated with monitoring system malfunctions in calculations used to report emissions or operating levels. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system.

(2) *PM Compliance.* If you are subject to limitations on PM emissions under §63.1343(b), you must use the monitoring methods and procedures in §63.1350(b) and (d).

(9) *Startup and Shutdown Compliance.* All dry sorbent and activated carbon systems that control hazardous air pollutants must be turned on and operating at the time the gas stream at the inlet to the baghouse or ESP reaches 300 degrees Fahrenheit (five minute average) during startup. Temperature of the gas stream is to be measured at the inlet of the baghouse or ESP every minute. Such injection systems can be turned off during shutdown. Particulate control and all remaining devices that control hazardous air pollutants should be operational during startup and shutdown.

**Compliance Requirements – Changes in Operation:** 63.1348(c)

**§63.1348 Compliance requirements.**

(c) *Changes in operations.* (1) If you plan to undertake a change in operations that may adversely affect compliance with an applicable standard, operating limit, or parametric monitoring value under this subpart, the source must conduct a performance test as specified in §63.1349(b).

(2) In preparation for and while conducting a performance test required in §63.1349(b), you may operate under the planned operational change conditions for a period not to exceed 360 hours, provided that the conditions in (c)(2)(i) through (c)(2)(iv) of this section are met. You must submit temperature and other monitoring data that are recorded during the pretest operations.

(i) You must provide the Administrator written notice at least 60 days prior to undertaking an operational change that may adversely affect compliance with an applicable standard under this subpart for any source, or as soon as practicable where 60 days advance notice is not feasible. Notice provided under this paragraph must include a description of the planned change, the emissions standards that may be affected by the change, and a schedule for completion of the performance test required under paragraph (c)(1) of this section, including when the planned operational change period would begin.

(ii) The performance test results must be documented in a test report according to §63.1349(a).

(iii) A test plan must be made available to the Administrator prior to performance testing, if requested.

(iv) The performance test must be completed within 360 hours after the planned operational change period begins.

**Compliance Requirements - General Duty to Minimize Emissions:** 63.1348(d)

**§63.1348 Compliance requirements.**

(d) *General duty to minimize emissions.* At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

**Performance Testing Requirements – General Requirements:** 63.1349(a)

**§63.1349 Performance testing requirements.**

(a) You must document performance test results in complete test reports that contain the information required by paragraphs (a)(1) through (10) of this section, as well as all other relevant information. As described in §63.7(c)(2)(i), you must make available to the Administrator prior to testing, if requested, the site-specific test plan to be followed during performance testing. For purposes of determining exhaust gas flow rate to the atmosphere from an alkali bypass stack or a coal mill stack, you must either install, operate, calibrate and maintain an instrument for continuously measuring and recording the exhaust gas flow rate according to the requirements in paragraphs §63.1350(n)(1) through (10) of this subpart or use the maximum design exhaust gas flow rate. For purposes of determining the combined emissions from kilns equipped with an alkali bypass or that exhaust kiln gases to a coal mill that exhausts through a separate stack, instead of installing a CEMS on the alkali bypass stack or coal mill stack, you may use the results of the initial and subsequent performance test to demonstrate compliance with the relevant emissions limit.

- (1) A brief description of the process and the air pollution control system;
- (2) Sampling location description(s);
- (3) A description of sampling and analytical procedures and any modifications to standard procedures;
- (4) Test results;
- (5) Quality assurance procedures and results;
- (6) Records of operating conditions during the performance test, preparation of standards, and calibration procedures;
- (7) Raw data sheets for field sampling and field and laboratory analyses;
- (8) Documentation of calculations;
- (9) All data recorded and used to establish parameters for monitoring; and
- (10) Any other information required by the performance test method

**Performance Testing Requirements – Pollutant Specific Requirements for PM:** 63.1349(b)(1)(i)-(vii)

**§63.1349 Performance testing requirements.**

(b)(1) *PM emissions tests.* The owner or operator of a kiln and clinker cooler subject to limitations on PM emissions shall demonstrate initial compliance by conducting a performance test using Method 5 or Method 5I at appendix A-3 to part 60 of this chapter. You must also monitor continuous performance through use of a PM continuous parametric monitoring system (PM CPMS).

(i) For your PM CPMS, you will establish a site-specific operating limit. If your PM performance test demonstrates your PM emission levels to be below 75 percent of your emission limit you will use the average PM CPMS value recorded during the PM compliance test, the milliamp or digital equivalent of zero output from your PM CPMS, and the average PM result of your compliance test to establish your

operating limit. If your PM compliance test demonstrates your PM emission levels to be at or above 75 percent of your emission limit you will use the average PM CPMS value recorded during the PM compliance test to establish your operating limit. You will use the PM CPMS to demonstrate continuous compliance with your operating limit. You must repeat the performance test annually and reassess and adjust the site-specific operating limit in accordance with the results of the performance test.

(A) Your PM CPMS must provide a 4-20 milliamp or digital signal output and the establishment of its relationship to manual reference method measurements must be determined in units of milliamps or the monitors digital equivalent.

(B) Your PM CPMS operating range must be capable of reading PM concentrations from zero to a level equivalent to three times your allowable emission limit. If your PM CPMS is an auto-ranging instrument capable of multiple scales, the primary range of the instrument must be capable of reading PM concentration from zero to a level equivalent to three times your allowable emission limit.

(C) During the initial performance test or any such subsequent performance test that demonstrates compliance with the PM limit, record and average all milliamp or digital output values from the PM CPMS for the periods corresponding to the compliance test runs (*e.g.*, average all your PM CPMS output values for three corresponding Method 5I test runs).

(ii) Determine your operating limit as specified in paragraphs (b)(1)(iii) through (iv) of this section. If your PM performance test demonstrates your PM emission levels to be below 75 percent of your emission limit you will use the average PM CPMS value recorded during the PM compliance test, the milliamp or digital equivalent of zero output from your PM CPMS, and the average PM result of your compliance test to establish your operating limit. If your PM compliance test demonstrates your PM emission levels to be at or above 75 percent of your emission limit you will use the average PM CPMS value recorded during the PM compliance test to establish your operating limit. You must verify an existing or establish a new operating limit after each repeated performance test. You must repeat the performance test at least annually and reassess and adjust the site-specific operating limit in accordance with the results of the performance test.

(iii) If the average of your three Method 5 or 5I compliance test runs is below 75 percent of your PM emission limit, you must calculate an operating limit by establishing a relationship of PM CPMS signal to PM concentration using the PM CPMS instrument zero, the average PM CPMS values corresponding to the three compliance test runs, and the average PM concentration from the Method 5 or 5I compliance test with the procedures in (b)(1)(iii)(A) through (D) of this section.

(A) Determine your PM CPMS instrument zero output with one of the following procedures:

(1) Zero point data for in-situ instruments should be obtained by removing the instrument from the stack and monitoring ambient air on a test bench.

(2) Zero point data for extractive instruments should be obtained by removing the extractive probe from the stack and drawing in clean ambient air.

(3) The zero point may also be established by performing manual reference method measurements when the flue gas is free of PM emissions or contains very low PM concentrations (*e.g.*, when your process is not operating, but the fans are operating or your source is combusting only natural gas) and plotting these with the compliance data to find the zero intercept.

(4) If none of the steps in paragraphs (b)(1)(iii)(A)(I) through (3) of this section are possible, you must use a zero output value provided by the manufacturer.

(B) Determine your PM CPMS instrument average in milliamps or digital equivalent, and the average of your corresponding three PM compliance test runs, using equation 3.

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n X_i, \bar{y} = \frac{1}{n} \sum_{i=1}^n Y_i \quad (\text{Eq. 3})$$

Where:

$X_i$  = The PM CPMS data points for the three runs constituting the performance test.

$Y_i$  = The PM concentration value for the three runs constituting the performance test.

$n$  = The number of data points.

(C) With your instrument zero expressed in milliamps or a digital value, your three run average PM CPMS milliamp or digital signal value, and your three run PM compliance test average, determine a relationship of lb/ton-clinker per milliamp or digital signal value with Equation 4.

$$R = \frac{Y_1}{(X_1 - z)} \quad (\text{Eq. 4})$$

Where:

$R$  = The relative lb/ton-clinker per milliamp or digital equivalent for your PM CPMS.

$Y_1$  = The three run average lb/ton-clinker PM concentration.

$X_1$  = The three run average milliamp or digital equivalent output from your PM CPMS.

$z$  = The milliamp or digital equivalent of your instrument zero determined from (b)(1)(iii)(A).

(D) Determine your source specific 30-day rolling average operating limit using the lb/ton-clinker per milliamp or digital signal value from Equation 4 in Equation 5, below. This sets your operating limit at the PM CPMS output value corresponding to 75 percent of your emission limit.

$$O_1 = z + \frac{0.75 (L)}{R} \quad (\text{Eq. 5})$$

Where:

$O_1$  = The operating limit for your PM CPMS on a 30-day rolling average, in milliamps or the digital equivalent.

L = Your source emission limit expressed in lb/ton clinker.

z = Your instrument zero in milliamps, or digital equivalent, determined from (b)(1)(iii)(A).

R = The relative lb/ton-clinker per milliamp, or digital equivalent, for your PM CPMS, from Equation 4.

(iv) If the average of your three PM compliance test runs is at or above 75 percent of your PM emission limit you must determine your operating limit by averaging the PM CPMS milliamp or digital equivalent output corresponding to your three PM performance test runs that demonstrate compliance with the emission limit using Equation 6.

$$O_h = \frac{1}{n} \sum_{i=1}^n X_i \quad (\text{Eq. 6})$$

Where:

$X_i$  = The PM CPMS data points for all runs i.

n = The number of data points.

$O_h$  = Your site specific operating limit, in milliamps or the digital equivalent.

(v) To determine continuous operating compliance, you must record the PM CPMS output data for all periods when the process is operating, and use all the PM CPMS data for calculations when the source is not out-of-control. You must demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (milliamps or the digital equivalent) on a 30 operating day rolling average basis, updated at the end of each new kiln operating day. Use Equation 7 to determine the 30 kiln operating day average.

$$30 \text{ kiln operating day} = \frac{\sum_{i=1}^n Hpvi}{n} \quad (\text{Eq. 7})$$

Where:

$Hpvi$  = The hourly parameter value for hour i.

n = The number of valid hourly parameter values collected over 30 kiln operating days.

(vi) For each performance test, conduct at least three separate test runs each while the mill is on and the mill is off, under the conditions that exist when the affected source is operating at the level reasonably expected to occur. Conduct each test run to collect a minimum sample volume of 2 dscm for determining compliance with a new source limit and 1 dscm for determining compliance with an existing source limit. Calculate the time weighted average of the results from three consecutive runs, including applicable sources as required by (b)(1)(viii), to determine compliance. You need not determine the particulate matter collected in the impingers (“back half”) of the Method 5 or Method 5I particulate sampling train to



demonstrate compliance with the PM standards of this subpart. This shall not preclude the permitting authority from requiring a determination of the “back half” for other purposes.

(vii) For PM performance test reports used to set a PM CPMS operating limit, the electronic submission of the test report must also include the make and model of the PM CPMS instrument, serial number of the instrument, analytical principle of the instrument (*e.g.* beta attenuation), span of the instruments primary analytical range, milliamp value or digital equivalent to the instrument zero output, technique by which this zero value was determined, and the average milliamp or digital equivalent signals corresponding to each PM compliance test run.

**Monitoring – PM:** 63.1350(b)

**§63.1350 Monitoring requirements.**

(b) *PM monitoring requirements.* (1)(i) *PM CPMS.* You will use a PM CPMS to establish a site-specific operating limit corresponding to the results of the performance test demonstrating compliance with the PM limit. You will conduct your performance test using Method 5 or Method 5I at appendix A-3 to part 60 of this chapter. You will use the PM CPMS to demonstrate continuous compliance with this operating limit. You must repeat the performance test annually and reassess and adjust the site-specific operating limit in accordance with the results of the performance test using the procedures in §63.1349(b)(1) (i) through (vi) of this subpart. You must also repeat the test if you change the analytical range of the instrument, or if you replace the instrument itself or any principle analytical component of the instrument that would alter the relationship of output signal to in-stack PM concentration.

(ii) To determine continuous compliance, you must use the PM CPMS output data for all periods when the process is operating and the PM CPMS is not out-of-control. You must demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (milliamps) on a 30 operating day rolling average basis, updated at the end of each new kiln operating day.

(iii) For any exceedance of the 30 process operating day PM CPMS average value from the established operating parameter limit, you must:

(A) Within 48 hours of the exceedance, visually inspect the APCD;

(B) If inspection of the APCD identifies the cause of the exceedance, take corrective action as soon as possible and return the PM CPMS measurement to within the established value; and

(C) Within 30 days of the exceedance or at the time of the annual compliance test, whichever comes first, conduct a PM emissions compliance test to determine compliance with the PM emissions limit and to verify or re-establish the PM CPMS operating limit within 45 days. You are not required to conduct additional testing for any exceedances that occur between the time of the original exceedance and the PM emissions compliance test required under this paragraph.

(iv) PM CPMS exceedances leading to more than four required performance tests in a 12-month process operating period (rolling monthly) constitute a presumptive violation of this subpart.

(2) [Reserved]

**Monitoring – Parameter Monitoring:** 63.1350(m), (m)(1) - (9)

**§63.1350 Monitoring requirements.**

(m) *Parameter monitoring requirements.* If you have an operating limit that requires the use of a CMS, you must install, operate, and maintain each continuous parameter monitoring system (CPMS) according to the procedures in paragraphs (m)(1) through (4) of this section by the compliance date specified in §63.1351. You must also meet the applicable specific parameter monitoring requirements in paragraphs (m)(5) through (11) that are applicable to you.

(1) The CMS must complete a minimum of one cycle of operation for each successive 15-minute period. You must have a minimum of four successive cycles of operation to have a valid hour of data.

(2) You must conduct all monitoring in continuous operation at all times that the unit is operating.

(3) Determine the 1-hour block average of all recorded readings.

(4) Record the results of each inspection, calibration, and validation check.

(5) *Liquid flow rate monitoring requirements.* If you have an operating limit that requires the use of a flow measurement device, you must meet the requirements in paragraphs (m)(5)(i) through (iv) of this section.

(i) Locate the flow sensor and other necessary equipment in a position that provides a representative flow.

(ii) Use a flow sensor with a measurement sensitivity of 2 percent of the flow rate.

(iii) Reduce swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(iv) Conduct a flow sensor calibration check at least semiannually.

(6) *Specific pressure monitoring requirements.* If you have an operating limit that requires the use of a pressure measurement device, you must meet the requirements in paragraphs (m)(6)(i) through (vi) of this section.

(i) Locate the pressure sensor(s) in a position that provides a representative measurement of the pressure.

(ii) Minimize or eliminate pulsating pressure, vibration, and internal and external corrosion.

(iii) Use a gauge with a minimum tolerance of 1.27 centimeters of water or a transducer with a minimum tolerance of 1 percent of the pressure range.

(iv) Check pressure tap pluggage daily.

(v) Using a manometer, check gauge calibration quarterly and transducer calibration monthly.

(vi) Conduct calibration checks any time the sensor exceeds the manufacturer's specified maximum operating pressure range or install a new pressure sensor.

(7) *Specific pH monitoring requirements.* If you have an operating limit that requires the use of a pH measurement device, you must meet the requirements in paragraphs (m)(7)(i) through (iii) of this section.

(i) Locate the pH sensor in a position that provides a representative measurement of wet scrubber or tray tower effluent pH.

(ii) Ensure the sample is properly mixed and representative of the fluid to be measured.

(iii) Check the pH meter's calibration on at least two points every 8 hours of process operation.

(8) [Reserved]

(9) *Mass flow rate (for sorbent injection) monitoring requirements.* If you have an operating limit that requires the use of equipment to monitor sorbent injection rate (*e.g.*, weigh belt, weigh hopper, or hopper flow measurement device), you must meet the requirements in paragraphs (m)(9)(i) through (iii) of this section. These requirements also apply to the sorbent injection equipment of a dry scrubber.

(i) Locate the device in a position(s) that provides a representative measurement of the total sorbent injection rate.

(ii) Install and calibrate the device in accordance with manufacturer's procedures and specifications.

(iii) At least annually, calibrate the device in accordance with the manufacturer's procedures and specifications.

#### **Monitoring – Continuous Flow Rate:** 63.1350(n)

#### **§63.1350 Monitoring requirements.**

(n) *Continuous Flow Rate Monitoring System.* You must install, operate, calibrate, and maintain instruments, according to the requirements in paragraphs (n)(1) through (10) of this section, for continuously measuring and recording the stack gas flow rate to allow determination of the pollutant mass emissions rate to the atmosphere from sources subject to an emissions limitation that has a pounds per ton of clinker unit and that is required to be monitored by a CEMS.

(1) You must install each sensor of the flow rate monitoring system in a location that provides representative measurement of the exhaust gas flow rate at the sampling location of the mercury CEMS, taking into account the manufacturer's recommendations. The flow rate sensor is that portion of the system that senses the volumetric flow rate and generates an output proportional to that flow rate.

(2) The flow rate monitoring system must be designed to measure the exhaust flow rate over a range that extends from a value of at least 20 percent less than the lowest expected exhaust flow rate to a value of at least 20 percent greater than the highest expected exhaust flow rate.

(3) [Reserved]

(4) The flow rate monitoring system must be equipped with a data acquisition and recording system that is capable of recording values over the entire range specified in paragraph (n)(2) of this section.

(5) The signal conditioner, wiring, power supply, and data acquisition and recording system for the flow rate monitoring system must be compatible with the output signal of the flow rate sensors used in the monitoring system.

(6) The flow rate monitoring system must be designed to complete a minimum of one cycle of operation for each successive 15-minute period.

(7) The flow rate sensor must have provisions to determine the daily zero and upscale calibration drift (CD) (*see* sections 3.1 and 8.3 of Performance Specification 2 in appendix B to Part 60 of this chapter for a discussion of CD).

(i) Conduct the CD tests at two reference signal levels, zero (e.g., 0 to 20 percent of span) and upscale (e.g., 50 to 70 percent of span).

(ii) The absolute value of the difference between the flow monitor response and the reference signal must be equal to or less than 3 percent of the flow monitor span.

(8) You must perform an initial relative accuracy test of the flow rate monitoring system according to Section 8.2 of Performance Specification 6 of appendix B to part 60 of the chapter with the exceptions in paragraphs (n)(8)(i) and (n)(8)(ii) of this section.

(i) The relative accuracy test is to evaluate the flow rate monitoring system alone rather than a continuous emission rate monitoring system.

(ii) The relative accuracy of the flow rate monitoring system shall be no greater than 10 percent of the mean value of the reference method data.

(9) You must verify the accuracy of the flow rate monitoring system at least once per year by repeating the relative accuracy test specified in paragraph (n)(8).

(10) You must operate the flow rate monitoring system and record data during all periods of operation of the affected facility including periods of startup, shutdown, and malfunction, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments).

## **Portland Cement Manufacturing Industry NESHAP Requirements**

### **New or Existing Conveying System Transfer Point**

#### **Applicability/Affected Sources:** 63.1340(b)(7)

#### **§63.1340 What parts of my plant does this subpart cover?**

(b) The affected sources subject to this subpart are:

(7) Each conveying system transfer point including those associated with coal preparation used to convey coal from the mill to the kiln at any portland cement plant that is a major source;

#### **Emission and Work Practice Standards – Emission Limits for Opacity:** 63.1345

#### **§63.1345 Emissions limits for affected sources other than kilns; clinker coolers; new and reconstructed raw material dryers.**

The owner or operator of each new or existing raw material, clinker, or finished product storage bin; conveying system transfer point; bagging system; bulk loading or unloading system; raw and finish mills; and each existing raw material dryer, at a facility which is a major source subject to the provisions of this subpart must not cause to be discharged any gases from these affected sources which exhibit opacity in excess of 10 percent.

#### **Operation and Maintenance Plan:** 63.1347

#### **§63.1347 Operation and maintenance plan requirements.**

(a) You must prepare, for each affected source subject to the provisions of this subpart, a written operations and maintenance plan. The plan must be submitted to the Administrator for review and approval as part of the application for a part 70 permit and must include the following information:

(1) Procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the emissions limits and operating limits, including fugitive dust control measures for open clinker piles of §§63.1343, 63.1345, and 63.1346. Your operations and maintenance plan must address periods of startup and shutdown.

(2) Corrective actions to be taken when required by paragraph §63.1350(f)(3);

(3) Procedures to be used during an inspection of the components of the combustion system of each kiln and each in-line kiln raw mill located at the facility at least once per year.

(b) Failure to comply with any provision of the operations and maintenance plan developed in accordance with this section is a violation of the standard.

#### **Compliance Requirements – Initial Performance Test Requirements:** 63.1348(a), (a)(2)

#### **§63.1348 Compliance requirements.**

(a) *Initial Performance Test Requirements.* For an affected source subject to this subpart, you must demonstrate compliance with the emissions standards and operating limits by using the test methods and procedures in §§63.1349 and 63.7. Any cement kiln that has been subject to the requirements of subpart CCCC or subpart DDDD of 40 CFR Part 60, and is now electing to cease burning nonhazardous solid waste and become subject to this subpart, must meet all the initial compliance testing requirements each time it becomes subject to this subpart, even if it was previously subject to this subpart.

NOTE TO PARAGRAPH (a): The first day of the 30 operating day performance test is the first day after the compliance date following completion of the field testing and data collection that demonstrates that the CPMS or CEMS has satisfied the relevant CPMS performance evaluation or CEMS performance specification (e.g., PS 2, 12A, or 12B) acceptance criteria. The performance test period is complete at the end of the 30th consecutive operating day. See §63.1341 for definition of operating day and §63.1348(b)(1) for the CEMS operating requirements. The source has the option of performing the compliance test earlier than the compliance date if desired.

(2) *Opacity Compliance.* If you are subject to the limitations on opacity under §63.1345, you must demonstrate compliance with the opacity emissions standards by using the performance test methods and procedures in §63.1349(b)(2). Use the maximum 6-minute average opacity exhibited during the performance test period to determine whether the affected source is in compliance with the standard.

**Compliance Requirements – Continuous Monitoring Requirements:** 63.1348(b), (b)(1)(i)-(iii), (3)

**§63.1348 Compliance requirements.**

(b) *Continuous Monitoring Requirements.* You must demonstrate compliance with the emissions standards and operating limits by using the performance test methods and procedures in §§63.1350 and 63.8 for each affected source.

(1) *General Requirements.* (i) You must monitor and collect data according to §63.1350 and the site-specific monitoring plan required by §63.1350(p).

(ii) Except for periods of startup and shutdown, monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), you must operate the monitoring system and collect data at all required intervals at all times the affected source is operating.

(iii) You may not use data recorded during monitoring system startup, shutdown or malfunctions or repairs associated with monitoring system malfunctions in calculations used to report emissions or operating levels. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system.

(3) *Opacity Compliance.* If you are subject to the limitations on opacity under §63.1345, you must demonstrate compliance using the monitoring methods and procedures in §63.1350(f) based on the maximum 6-minute average opacity exhibited during the performance test period. You must initiate corrective actions within one hour of detecting visible emissions above the applicable limit.

(i) *COMS*. If you install a COMS in lieu of conducting the daily visible emissions testing, you must demonstrate compliance using a COMS such that it is installed, operated, and maintained in accordance with the requirements of §63.1350(f)(4)(i).

(ii) Bag leak determination system (*BLDS*). If you install a BLDS on a raw mill or finish mill in lieu of conducting the daily visible emissions testing, you must demonstrate compliance using a BLDS that is installed, operated, and maintained in accordance with the requirements of §63.1350(f)(4)(ii).

**Compliance Requirements – Changes in Operation:** 63.1348(c)

**§63.1348 Compliance requirements.**

(c) *Changes in operations*. (1) If you plan to undertake a change in operations that may adversely affect compliance with an applicable standard, operating limit, or parametric monitoring value under this subpart, the source must conduct a performance test as specified in §63.1349(b).

(2) In preparation for and while conducting a performance test required in §63.1349(b), you may operate under the planned operational change conditions for a period not to exceed 360 hours, provided that the conditions in (c)(2)(i) through (c)(2)(iv) of this section are met. You must submit temperature and other monitoring data that are recorded during the pretest operations.

(i) You must provide the Administrator written notice at least 60 days prior to undertaking an operational change that may adversely affect compliance with an applicable standard under this subpart for any source, or as soon as practicable where 60 days advance notice is not feasible. Notice provided under this paragraph must include a description of the planned change, the emissions standards that may be affected by the change, and a schedule for completion of the performance test required under paragraph (c)(1) of this section, including when the planned operational change period would begin.

(ii) The performance test results must be documented in a test report according to §63.1349(a).

(iii) A test plan must be made available to the Administrator prior to performance testing, if requested.

(iv) The performance test must be completed within 360 hours after the planned operational change period begins.

**Compliance Requirements – General Duty to Minimize Emissions:** 63.1348(d)

**§63.1348 Compliance requirements.**

(d) *General duty to minimize emissions*. At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

**Performance Testing Requirements – General Requirements:** 63.1349(a)

**§63.1349 Performance testing requirements.**

(a) You must document performance test results in complete test reports that contain the information required by paragraphs (a)(1) through (10) of this section, as well as all other relevant information. As described in §63.7(c)(2)(i), you must make available to the Administrator prior to testing, if requested, the site-specific test plan to be followed during performance testing. For purposes of determining exhaust gas flow rate to the atmosphere from an alkali bypass stack or a coal mill stack, you must either install, operate, calibrate and maintain an instrument for continuously measuring and recording the exhaust gas flow rate according to the requirements in paragraphs §63.1350(n)(1) through (10) of this subpart or use the maximum design exhaust gas flow rate. For purposes of determining the combined emissions from kilns equipped with an alkali bypass or that exhaust kiln gases to a coal mill that exhausts through a separate stack, instead of installing a CEMS on the alkali bypass stack or coal mill stack, you may use the results of the initial and subsequent performance test to demonstrate compliance with the relevant emissions limit.

(1) A brief description of the process and the air pollution control system;

(2) Sampling location description(s);

(3) A description of sampling and analytical procedures and any modifications to standard procedures;

(4) Test results;

(5) Quality assurance procedures and results;

(6) Records of operating conditions during the performance test, preparation of standards, and calibration procedures;

(7) Raw data sheets for field sampling and field and laboratory analyses;

(8) Documentation of calculations;

(9) All data recorded and used to establish parameters for monitoring; and

(10) Any other information required by the performance test method

**Performance Testing Requirements – Pollutant Specific Requirements for Opacity:** 63.1349(b)(2)

**§63.1349 Performance testing requirements.**

(b) \* \* \*

(2) *Opacity tests.* If you are subject to limitations on opacity under this subpart, you must conduct opacity tests in accordance with Method 9 of appendix A-4 to part 60 of this chapter. The duration of the Method 9 performance test must be 3 hours (30 6-minute averages), except that the duration of the Method 9 performance test may be reduced to 1 hour if the conditions of paragraphs (b)(2)(i) and (ii) of this section apply. For batch processes that are not run for 3-hour periods or longer, compile observations totaling 3 hours when the unit is operating.

(i) There are no individual readings greater than 10 percent opacity;

(ii) There are no more than three readings of 10 percent for the first 1-hour period.



**Monitoring – Opacity:** 63.1350(f), (f)(1), (3)

**§63.1350 Monitoring requirements.**

(f) *Opacity monitoring requirements.* If you are subject to a limitation on opacity under §63.1345, you must conduct required opacity monitoring in accordance with the provisions of paragraphs (f)(1)(i) through (vii) of this section and in accordance with your monitoring plan developed under §63.1350(p). You must also develop an opacity monitoring plan in accordance with paragraphs (p)(1) through (4) and paragraph (o)(5), if applicable, of this section.

(1)(i) You must conduct a monthly 10-minute visible emissions test of each affected source in accordance with Method 22 of appendix A-7 to part 60 of this chapter. The performance test must be conducted while the affected source is in operation.

(ii) If no visible emissions are observed in six consecutive monthly tests for any affected source, the owner or operator may decrease the frequency of performance testing from monthly to semi-annually for that affected source. If visible emissions are observed during any semi-annual test, you must resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

(iii) If no visible emissions are observed during the semi-annual test for any affected source, you may decrease the frequency of performance testing from semi-annually to annually for that affected source. If visible emissions are observed during any annual performance test, the owner or operator must resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

(iv) If visible emissions are observed during any Method 22 performance test, of appendix A-7 to part 60 of this chapter, you must conduct 30 minutes of opacity observations, recorded at 15-second intervals, in accordance with Method 9 of appendix A-4 to part 60 of this chapter. The Method 9 performance test, of appendix A-4 to part 60 of this chapter, must begin within 1 hour of any observation of visible emissions.

(v) Any totally enclosed conveying system transfer point, regardless of the location of the transfer point is not required to conduct Method 22 visible emissions monitoring under this paragraph. The enclosures for these transfer points must be operated and maintained as total enclosures on a continuing basis in accordance with the facility operations and maintenance plan.

(vi) If any partially enclosed or unenclosed conveying system transfer point is located in a building, you must conduct a Method 22 performance test, of appendix A-7 to part 60 of this chapter, according to the requirements of paragraphs (f)(1)(i) through (iv) of this section for each such conveying system transfer point located within the building, or for the building itself, according to paragraph (f)(1)(vii) of this section.

(vii) If visible emissions from a building are monitored, the requirements of paragraphs (f)(1)(i) through (f)(1)(iv) of this section apply to the monitoring of the building, and you must also test visible emissions from each side, roof, and vent of the building for at least 10 minutes.

(3) If visible emissions are observed during any Method 22 visible emissions test conducted under paragraphs (f)(1) or (2) of this section, you must initiate, within one-hour, the corrective actions specified in your operation and maintenance plan as required in §63.1347.

## Portland Cement Manufacturing Industry NESHAP Requirements

### New or Existing Finish Mill

**Applicability/Affected Sources:** 63.1340(b)(4)

**§63.1340 What parts of my plant does this subpart cover?**

(b) The affected sources subject to this subpart are:

(4) Each finish mill at any portland cement plant;

**Emission and Work Practice Standards – Emission Limits for Opacity:** 63.1343(b)(1), Table 1 #13, 63.1345

**§63.1343 What standards apply to my kilns, clinker coolers, raw material dryers, and open clinker storage piles?**

(b) Kilns, clinker coolers, raw material dryers, raw mills, and finish mills. (1) The emissions limits for these sources are shown in Table 1.

**Table 1—Emissions Limits for Kilns, Clinker Coolers, Raw Material Dryers, Raw and Finish Mills**

<b>If your source is a (an):</b>	<b>And the operating mode is:</b>	<b>And if is located at a:</b>	<b>Your emissions limits are:</b>	<b>And the units of the emissions limit are:</b>	<b>The oxygen correction factor is:</b>
13. Existing or new raw or finish mill	All operating modes	Major source	Opacity 10	percent	NA.

**§63.1345 Emissions limits for affected sources other than kilns; clinker coolers; new and reconstructed raw material dryers.**

The owner or operator of each new or existing raw material, clinker, or finished product storage bin; conveying system transfer point; bagging system; bulk loading or unloading system; raw and finish mills; and each existing raw material dryer, at a facility which is a major source subject to the provisions of this subpart must not cause to be discharged any gases from these affected sources which exhibit opacity in excess of 10 percent.

**Operation and Maintenance Plan:** 63.1347

**§63.1347 Operation and maintenance plan requirements.**

(a) You must prepare, for each affected source subject to the provisions of this subpart, a written operations and maintenance plan. The plan must be submitted to the Administrator for review and approval as part of the application for a part 70 permit and must include the following information:

(1) Procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the emissions limits and operating limits, including fugitive dust control measures for open clinker piles of §§63.1343, 63.1345, and 63.1346. Your operations and maintenance plan must address periods of startup and shutdown.

(2) Corrective actions to be taken when required by paragraph §63.1350(f)(3);

(3) Procedures to be used during an inspection of the components of the combustion system of each kiln and each in-line kiln raw mill located at the facility at least once per year.

(b) Failure to comply with any provision of the operations and maintenance plan developed in accordance with this section is a violation of the standard.

**Compliance Requirements – Initial Performance Test Requirements:** 63.1348(a), (a)(2)

**§63.1348 Compliance requirements.**

(a) *Initial Performance Test Requirements.* For an affected source subject to this subpart, you must demonstrate compliance with the emissions standards and operating limits by using the test methods and procedures in §§63.1349 and 63.7. Any cement kiln that has been subject to the requirements of subpart CCCC or subpart DDDD of 40 CFR Part 60, and is now electing to cease burning nonhazardous solid waste and become subject to this subpart, must meet all the initial compliance testing requirements each time it becomes subject to this subpart, even if it was previously subject to this subpart.

NOTE TO PARAGRAPH (a): The first day of the 30 operating day performance test is the first day after the compliance date following completion of the field testing and data collection that demonstrates that the CPMS or CEMS has satisfied the relevant CPMS performance evaluation or CEMS performance specification (e.g., PS 2, 12A, or 12B) acceptance criteria. The performance test period is complete at the end of the 30th consecutive operating day. See §63.1341 for definition of operating day and §63.1348(b)(1) for the CEMS operating requirements. The source has the option of performing the compliance test earlier than the compliance date if desired.

(2) *Opacity Compliance.* If you are subject to the limitations on opacity under §63.1345, you must demonstrate compliance with the opacity emissions standards by using the performance test methods and procedures in §63.1349(b)(2). Use the maximum 6-minute average opacity exhibited during the performance test period to determine whether the affected source is in compliance with the standard.

**Compliance Requirements – Continuous Monitoring Requirements:** 63.1348(b), (b)(1)(i)-(iii), (3)

**§63.1348 Compliance requirements.**

(b) *Continuous Monitoring Requirements.* You must demonstrate compliance with the emissions standards and operating limits by using the performance test methods and procedures in §§63.1350 and 63.8 for each affected source.

(1) *General Requirements.* (i) You must monitor and collect data according to §63.1350 and the site-specific monitoring plan required by §63.1350(p).

(ii) Except for periods of startup and shutdown, monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments),

you must operate the monitoring system and collect data at all required intervals at all times the affected source is operating.

(iii) You may not use data recorded during monitoring system startup, shutdown or malfunctions or repairs associated with monitoring system malfunctions in calculations used to report emissions or operating levels. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system.

(3) *Opacity Compliance*. If you are subject to the limitations on opacity under §63.1345, you must demonstrate compliance using the monitoring methods and procedures in §63.1350(f) based on the maximum 6-minute average opacity exhibited during the performance test period. You must initiate corrective actions within one hour of detecting visible emissions above the applicable limit.

(i) *COMS*. If you install a COMS in lieu of conducting the daily visible emissions testing, you must demonstrate compliance using a COMS such that it is installed, operated, and maintained in accordance with the requirements of §63.1350(f)(4)(i).

(ii) Bag leak determination system (*BLDS*). If you install a BLDS on a raw mill or finish mill in lieu of conducting the daily visible emissions testing, you must demonstrate compliance using a BLDS that is installed, operated, and maintained in accordance with the requirements of §63.1350(f)(4)(ii).

**Compliance Requirements – Changes in Operation:** 63.1348(c)

**§63.1348 Compliance requirements.**

(c) *Changes in operations*. (1) If you plan to undertake a change in operations that may adversely affect compliance with an applicable standard, operating limit, or parametric monitoring value under this subpart, the source must conduct a performance test as specified in §63.1349(b).

(2) In preparation for and while conducting a performance test required in §63.1349(b), you may operate under the planned operational change conditions for a period not to exceed 360 hours, provided that the conditions in (c)(2)(i) through (c)(2)(iv) of this section are met. You must submit temperature and other monitoring data that are recorded during the pretest operations.

(i) You must provide the Administrator written notice at least 60 days prior to undertaking an operational change that may adversely affect compliance with an applicable standard under this subpart for any source, or as soon as practicable where 60 days advance notice is not feasible. Notice provided under this paragraph must include a description of the planned change, the emissions standards that may be affected by the change, and a schedule for completion of the performance test required under paragraph (c)(1) of this section, including when the planned operational change period would begin.

(ii) The performance test results must be documented in a test report according to §63.1349(a).

(iii) A test plan must be made available to the Administrator prior to performance testing, if requested.

(iv) The performance test must be completed within 360 hours after the planned operational change period begins.

**Compliance Requirements – General Duty to Minimize Emissions:** 63.1348(d)

**§63.1348 Compliance requirements.**

(d) *General duty to minimize emissions.* At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

**Performance Testing Requirements – General Requirements:** 63.1349(a)

**§63.1349 Performance testing requirements.**

(a) You must document performance test results in complete test reports that contain the information required by paragraphs (a)(1) through (10) of this section, as well as all other relevant information. As described in §63.7(c)(2)(i), you must make available to the Administrator prior to testing, if requested, the site-specific test plan to be followed during performance testing. For purposes of determining exhaust gas flow rate to the atmosphere from an alkali bypass stack or a coal mill stack, you must either install, operate, calibrate and maintain an instrument for continuously measuring and recording the exhaust gas flow rate according to the requirements in paragraphs §63.1350(n)(1) through (10) of this subpart or use the maximum design exhaust gas flow rate. For purposes of determining the combined emissions from kilns equipped with an alkali bypass or that exhaust kiln gases to a coal mill that exhausts through a separate stack, instead of installing a CEMS on the alkali bypass stack or coal mill stack, you may use the results of the initial and subsequent performance test to demonstrate compliance with the relevant emissions limit.

- (1) A brief description of the process and the air pollution control system;
- (2) Sampling location description(s);
- (3) A description of sampling and analytical procedures and any modifications to standard procedures;
- (4) Test results;
- (5) Quality assurance procedures and results;
- (6) Records of operating conditions during the performance test, preparation of standards, and calibration procedures;
- (7) Raw data sheets for field sampling and field and laboratory analyses;
- (8) Documentation of calculations;
- (9) All data recorded and used to establish parameters for monitoring; and
- (10) Any other information required by the performance test method

**Performance Testing Requirements – Pollutant Specific Requirements for Opacity:** 63.1349(b)(2)

**§63.1349 Performance testing requirements.**

(b) \* \* \*

(2) *Opacity tests.* If you are subject to limitations on opacity under this subpart, you must conduct opacity tests in accordance with Method 9 of appendix A-4 to part 60 of this chapter. The duration of the Method 9 performance test must be 3 hours (30 6-minute averages), except that the duration of the Method 9 performance test may be reduced to 1 hour if the conditions of paragraphs (b)(2)(i) and (ii) of this section apply. For batch processes that are not run for 3-hour periods or longer, compile observations totaling 3 hours when the unit is operating.

(i) There are no individual readings greater than 10 percent opacity;

(ii) There are no more than three readings of 10 percent for the first 1-hour period.

**Monitoring – Opacity:** 63.1350(f), (f)(1)-(4)

**§63.1350 Monitoring requirements.**

(f) *Opacity monitoring requirements.* If you are subject to a limitation on opacity under §63.1345, you must conduct required opacity monitoring in accordance with the provisions of paragraphs (f)(1)(i) through (vii) of this section and in accordance with your monitoring plan developed under §63.1350(p). You must also develop an opacity monitoring plan in accordance with paragraphs (p)(1) through (4) and paragraph (o)(5), if applicable, of this section.

(1)(i) You must conduct a monthly 10-minute visible emissions test of each affected source in accordance with Method 22 of appendix A-7 to part 60 of this chapter. The performance test must be conducted while the affected source is in operation.

(ii) If no visible emissions are observed in six consecutive monthly tests for any affected source, the owner or operator may decrease the frequency of performance testing from monthly to semi-annually for that affected source. If visible emissions are observed during any semi-annual test, you must resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

(iii) If no visible emissions are observed during the semi-annual test for any affected source, you may decrease the frequency of performance testing from semi-annually to annually for that affected source. If visible emissions are observed during any annual performance test, the owner or operator must resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

(iv) If visible emissions are observed during any Method 22 performance test, of appendix A-7 to part 60 of this chapter, you must conduct 30 minutes of opacity observations, recorded at 15-second intervals, in accordance with Method 9 of appendix A-4 to part 60 of this chapter. The Method 9 performance test, of appendix A-4 to part 60 of this chapter, must begin within 1 hour of any observation of visible emissions.

(v) Any totally enclosed conveying system transfer point, regardless of the location of the transfer point is not required to conduct Method 22 visible emissions monitoring under this paragraph. The

enclosures for these transfer points must be operated and maintained as total enclosures on a continuing basis in accordance with the facility operations and maintenance plan.

(vi) If any partially enclosed or unenclosed conveying system transfer point is located in a building, you must conduct a Method 22 performance test, of appendix A-7 to part 60 of this chapter, according to the requirements of paragraphs (f)(1)(i) through (iv) of this section for each such conveying system transfer point located within the building, or for the building itself, according to paragraph (f)(1)(vii) of this section.

(vii) If visible emissions from a building are monitored, the requirements of paragraphs (f)(1)(i) through (f)(1)(iv) of this section apply to the monitoring of the building, and you must also test visible emissions from each side, roof, and vent of the building for at least 10 minutes.

(2)(i) For a raw mill or finish mill, you must monitor opacity by conducting daily visible emissions observations of the mill sweep and air separator PM control devices (PMCD) of these affected sources in accordance with the procedures of Method 22 of appendix A-7 to part 60 of this chapter. The duration of the Method 22 performance test must be 6 minutes.

(ii) Within 24 hours of the end of the Method 22 performance test in which visible emissions were observed, the owner or operator must conduct a follow up Method 22 performance test of each stack from which visible emissions were observed during the previous Method 22 performance test.

(iii) If visible emissions are observed during the follow-up Method 22 performance test required by paragraph (f)(2)(ii) of this section from any stack from which visible emissions were observed during the previous Method 22 performance test required by paragraph (f)(2)(i) of the section, you must then conduct an opacity test of each stack from which emissions were observed during the follow up Method 22 performance test in accordance with Method 9 of appendix A-4 to part 60 of this chapter. The duration of the Method 9 test must be 30 minutes.

(3) If visible emissions are observed during any Method 22 visible emissions test conducted under paragraphs (f)(1) or (2) of this section, you must initiate, within one-hour, the corrective actions specified in your operation and maintenance plan as required in §63.1347.

(4) The requirements under paragraph (f)(2) of this section to conduct daily Method 22 testing do not apply to any specific raw mill or finish mill equipped with a COMS or BLDS.

(i) If the owner or operator chooses to install a COMS in lieu of conducting the daily visible emissions testing required under paragraph (f)(2) of this section, then the COMS must be installed at the outlet of the PM control device of the raw mill or finish mill and the COMS must be installed, maintained, calibrated, and operated as required by the general provisions in subpart A of this part and according to PS-1 of appendix B to part 60 of this chapter.

(ii) If you choose to install a BLDS in lieu of conducting the daily visible emissions testing required under paragraph (f)(2) of this section, the requirements in paragraphs (m)(1) through (m)(4), (m)(10) and (m)(11) of this section apply.

**Monitoring – Parameter Monitoring:** 63.1350(m), (m)(1)-(4), (10), (11)

**§63.1350 Monitoring requirements.**

(m) *Parameter monitoring requirements.* If you have an operating limit that requires the use of a CMS, you must install, operate, and maintain each continuous parameter monitoring system (CPMS) according to the procedures in paragraphs (m)(1) through (4) of this section by the compliance date specified in §63.1351. You must also meet the applicable specific parameter monitoring requirements in paragraphs (m)(5) through (11) that are applicable to you.

(1) The CMS must complete a minimum of one cycle of operation for each successive 15-minute period. You must have a minimum of four successive cycles of operation to have a valid hour of data.

(2) You must conduct all monitoring in continuous operation at all times that the unit is operating.

(3) Determine the 1-hour block average of all recorded readings.

(4) Record the results of each inspection, calibration, and validation check.

(10) *Bag leak detection monitoring requirements.* If you elect to use a fabric filter bag leak detection system to comply with the requirements of this subpart, you must install, calibrate, maintain, and continuously operate a BLDS as specified in paragraphs (m)(10)(i) through (viii) of this section.

(i) You must install and operate a BLDS for each exhaust stack of the fabric filter.

(ii) Each BLDS must be installed, operated, calibrated, and maintained in a manner consistent with the manufacturer's written specifications and recommendations and in accordance with the guidance provided in EPA-454/R-98-015, September 1997.

(iii) The BLDS must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 or fewer milligrams per actual cubic meter.

(iv) The BLDS sensor must provide output of relative or absolute PM loadings.

(v) The BLDS must be equipped with a device to continuously record the output signal from the sensor.

(vi) The BLDS must be equipped with an alarm system that will alert an operator automatically when an increase in relative PM emissions over a preset level is detected. The alarm must be located such that the alert is detected and recognized easily by an operator.

(vii) For positive pressure fabric filter systems that do not duct all compartments of cells to a common stack, a BLDS must be installed in each baghouse compartment or cell.

(viii) Where multiple bag leak detectors are required, the system's instrumentation and alarm may be shared among detectors.

(11) For each BLDS, the owner or operator must initiate procedures to determine the cause of every alarm within 8 hours of the alarm. The owner or operator must alleviate the cause of the alarm within 24 hours of the alarm by taking whatever corrective action(s) are necessary. Corrective actions may include, but are not limited to the following:



(i) Inspecting the fabric filter for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in PM emissions;

(ii) Sealing off defective bags or filter media;

(iii) Replacing defective bags or filter media or otherwise repairing the control device;

(iv) Sealing off a defective fabric filter compartment;

(v) Cleaning the BLDS probe or otherwise repairing the BLDS; or

(vi) Shutting down the process producing the PM emissions.

## **Portland Cement Manufacturing Industry NESHAP Requirements**

### **New or Existing Storage Bin**

#### **Applicability/Affected Sources:** 63.1340(b)(6)

#### **§63.1340 What parts of my plant does this subpart cover?**

(b) The affected sources subject to this subpart are:

(6) Each raw material, clinker, or finished product storage bin at any portland cement plant that is a major source;

#### **Emission and Work Practice Standards – Emission Limits for Opacity:** 63.1345

#### **§63.1345 Emissions limits for affected sources other than kilns; clinker coolers; new and reconstructed raw material dryers.**

The owner or operator of each new or existing raw material, clinker, or finished product storage bin; conveying system transfer point; bagging system; bulk loading or unloading system; raw and finish mills; and each existing raw material dryer, at a facility which is a major source subject to the provisions of this subpart must not cause to be discharged any gases from these affected sources which exhibit opacity in excess of 10 percent.

#### **Operation and Maintenance Plan:** 63.1347

#### **§63.1347 Operation and maintenance plan requirements.**

(a) You must prepare, for each affected source subject to the provisions of this subpart, a written operations and maintenance plan. The plan must be submitted to the Administrator for review and approval as part of the application for a part 70 permit and must include the following information:

(1) Procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the emissions limits and operating limits, including fugitive dust control measures for open clinker piles of §§63.1343, 63.1345, and 63.1346. Your operations and maintenance plan must address periods of startup and shutdown.

(2) Corrective actions to be taken when required by paragraph §63.1350(f)(3);

(3) Procedures to be used during an inspection of the components of the combustion system of each kiln and each in-line kiln raw mill located at the facility at least once per year.

(b) Failure to comply with any provision of the operations and maintenance plan developed in accordance with this section is a violation of the standard.

#### **Compliance Requirements – Initial Performance Test Requirements:** 63.1348(a), (a)(2)

#### **§63.1348 Compliance requirements.**

(a) *Initial Performance Test Requirements.* For an affected source subject to this subpart, you must demonstrate compliance with the emissions standards and operating limits by using the test methods and procedures in §§63.1349 and 63.7. Any cement kiln that has been subject to the requirements of subpart CCCC or subpart DDDD of 40 CFR Part 60, and is now electing to cease burning nonhazardous solid waste and become subject to this subpart, must meet all the initial compliance testing requirements each time it becomes subject to this subpart, even if it was previously subject to this subpart.

NOTE TO PARAGRAPH (a): The first day of the 30 operating day performance test is the first day after the compliance date following completion of the field testing and data collection that demonstrates that the CPMS or CEMS has satisfied the relevant CPMS performance evaluation or CEMS performance specification (e.g., PS 2, 12A, or 12B) acceptance criteria. The performance test period is complete at the end of the 30th consecutive operating day. See §63.1341 for definition of operating day and §63.1348(b)(1) for the CEMS operating requirements. The source has the option of performing the compliance test earlier than the compliance date if desired.

(2) *Opacity Compliance.* If you are subject to the limitations on opacity under §63.1345, you must demonstrate compliance with the opacity emissions standards by using the performance test methods and procedures in §63.1349(b)(2). Use the maximum 6-minute average opacity exhibited during the performance test period to determine whether the affected source is in compliance with the standard.

**Compliance Requirements – Continuous Monitoring Requirements:** 63.1348(b), (b)(1)(i)-(iii), (3)

**§63.1348 Compliance requirements.**

(b) *Continuous Monitoring Requirements.* You must demonstrate compliance with the emissions standards and operating limits by using the performance test methods and procedures in §§63.1350 and 63.8 for each affected source.

(1) *General Requirements.* (i) You must monitor and collect data according to §63.1350 and the site-specific monitoring plan required by §63.1350(p).

(ii) Except for periods of startup and shutdown, monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), you must operate the monitoring system and collect data at all required intervals at all times the affected source is operating.

(iii) You may not use data recorded during monitoring system startup, shutdown or malfunctions or repairs associated with monitoring system malfunctions in calculations used to report emissions or operating levels. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system.

(3) *Opacity Compliance.* If you are subject to the limitations on opacity under §63.1345, you must demonstrate compliance using the monitoring methods and procedures in §63.1350(f) based on the maximum 6-minute average opacity exhibited during the performance test period. You must initiate corrective actions within one hour of detecting visible emissions above the applicable limit.

(i) *COMS*. If you install a COMS in lieu of conducting the daily visible emissions testing, you must demonstrate compliance using a COMS such that it is installed, operated, and maintained in accordance with the requirements of §63.1350(f)(4)(i).

(ii) Bag leak determination system (*BLDS*). If you install a BLDS on a raw mill or finish mill in lieu of conducting the daily visible emissions testing, you must demonstrate compliance using a BLDS that is installed, operated, and maintained in accordance with the requirements of §63.1350(f)(4)(ii).

**Compliance Requirements – Changes in Operation:** 63.1348(c)

**§63.1348 Compliance requirements.**

(c) *Changes in operations*. (1) If you plan to undertake a change in operations that may adversely affect compliance with an applicable standard, operating limit, or parametric monitoring value under this subpart, the source must conduct a performance test as specified in §63.1349(b).

(2) In preparation for and while conducting a performance test required in §63.1349(b), you may operate under the planned operational change conditions for a period not to exceed 360 hours, provided that the conditions in (c)(2)(i) through (c)(2)(iv) of this section are met. You must submit temperature and other monitoring data that are recorded during the pretest operations.

(i) You must provide the Administrator written notice at least 60 days prior to undertaking an operational change that may adversely affect compliance with an applicable standard under this subpart for any source, or as soon as practicable where 60 days advance notice is not feasible. Notice provided under this paragraph must include a description of the planned change, the emissions standards that may be affected by the change, and a schedule for completion of the performance test required under paragraph (c)(1) of this section, including when the planned operational change period would begin.

(ii) The performance test results must be documented in a test report according to §63.1349(a).

(iii) A test plan must be made available to the Administrator prior to performance testing, if requested.

(iv) The performance test must be completed within 360 hours after the planned operational change period begins.

**Compliance Requirements – General Duty to Minimize Emissions:** 63.1348(d)

**§63.1348 Compliance requirements.**

(d) *General duty to minimize emissions*. At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

**Performance Testing Requirements – General Requirements:** 63.1349(a)

**§63.1349 Performance testing requirements.**

(a) You must document performance test results in complete test reports that contain the information required by paragraphs (a)(1) through (10) of this section, as well as all other relevant information. As described in §63.7(c)(2)(i), you must make available to the Administrator prior to testing, if requested, the site-specific test plan to be followed during performance testing. For purposes of determining exhaust gas flow rate to the atmosphere from an alkali bypass stack or a coal mill stack, you must either install, operate, calibrate and maintain an instrument for continuously measuring and recording the exhaust gas flow rate according to the requirements in paragraphs §63.1350(n)(1) through (10) of this subpart or use the maximum design exhaust gas flow rate. For purposes of determining the combined emissions from kilns equipped with an alkali bypass or that exhaust kiln gases to a coal mill that exhausts through a separate stack, instead of installing a CEMS on the alkali bypass stack or coal mill stack, you may use the results of the initial and subsequent performance test to demonstrate compliance with the relevant emissions limit.

(1) A brief description of the process and the air pollution control system;

(2) Sampling location description(s);

(3) A description of sampling and analytical procedures and any modifications to standard procedures;

(4) Test results;

(5) Quality assurance procedures and results;

(6) Records of operating conditions during the performance test, preparation of standards, and calibration procedures;

(7) Raw data sheets for field sampling and field and laboratory analyses;

(8) Documentation of calculations;

(9) All data recorded and used to establish parameters for monitoring; and

(10) Any other information required by the performance test method

**Performance Testing Requirements – Pollutant Specific Requirements for Opacity:** 63.1349(b)(2)

**§63.1349 Performance testing requirements.**

(b) \* \* \*

(2) *Opacity tests.* If you are subject to limitations on opacity under this subpart, you must conduct opacity tests in accordance with Method 9 of appendix A-4 to part 60 of this chapter. The duration of the Method 9 performance test must be 3 hours (30 6-minute averages), except that the duration of the Method 9 performance test may be reduced to 1 hour if the conditions of paragraphs (b)(2)(i) and (ii) of this section apply. For batch processes that are not run for 3-hour periods or longer, compile observations totaling 3 hours when the unit is operating.

(i) There are no individual readings greater than 10 percent opacity;

(ii) There are no more than three readings of 10 percent for the first 1-hour period.

**Monitoring – Opacity:** 63.1350(f), (f)(1), (3)

**§63.1350 Monitoring requirements.**

(f) *Opacity monitoring requirements.* If you are subject to a limitation on opacity under §63.1345, you must conduct required opacity monitoring in accordance with the provisions of paragraphs (f)(1)(i) through (vii) of this section and in accordance with your monitoring plan developed under §63.1350(p). You must also develop an opacity monitoring plan in accordance with paragraphs (p)(1) through (4) and paragraph (o)(5), if applicable, of this section.

(1)(i) You must conduct a monthly 10-minute visible emissions test of each affected source in accordance with Method 22 of appendix A-7 to part 60 of this chapter. The performance test must be conducted while the affected source is in operation.

(ii) If no visible emissions are observed in six consecutive monthly tests for any affected source, the owner or operator may decrease the frequency of performance testing from monthly to semi-annually for that affected source. If visible emissions are observed during any semi-annual test, you must resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

(iii) If no visible emissions are observed during the semi-annual test for any affected source, you may decrease the frequency of performance testing from semi-annually to annually for that affected source. If visible emissions are observed during any annual performance test, the owner or operator must resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

(iv) If visible emissions are observed during any Method 22 performance test, of appendix A-7 to part 60 of this chapter, you must conduct 30 minutes of opacity observations, recorded at 15-second intervals, in accordance with Method 9 of appendix A-4 to part 60 of this chapter. The Method 9 performance test, of appendix A-4 to part 60 of this chapter, must begin within 1 hour of any observation of visible emissions.

(v) Any totally enclosed conveying system transfer point, regardless of the location of the transfer point is not required to conduct Method 22 visible emissions monitoring under this paragraph. The enclosures for these transfer points must be operated and maintained as total enclosures on a continuing basis in accordance with the facility operations and maintenance plan.

(vi) If any partially enclosed or unenclosed conveying system transfer point is located in a building, you must conduct a Method 22 performance test, of appendix A-7 to part 60 of this chapter, according to the requirements of paragraphs (f)(1)(i) through (iv) of this section for each such conveying system transfer point located within the building, or for the building itself, according to paragraph (f)(1)(vii) of this section.

(vii) If visible emissions from a building are monitored, the requirements of paragraphs (f)(1)(i) through (f)(1)(iv) of this section apply to the monitoring of the building, and you must also test visible emissions from each side, roof, and vent of the building for at least 10 minutes.

(3) If visible emissions are observed during any Method 22 visible emissions test conducted under paragraphs (f)(1) or (2) of this section, you must initiate, within one-hour, the corrective actions specified in your operation and maintenance plan as required in §63.1347.

## **Portland Cement Manufacturing Industry NESHAP Requirements**

### **New or Existing Bagging and Bulk Loading and Unloading**

#### **Applicability/Affected Sources:** 63.1340(b)(8)

#### **§63.1340 What parts of my plant does this subpart cover?**

(b) The affected sources subject to this subpart are:

(8) Each bagging and bulk loading and unloading system at any portland cement plant that is a major source;

#### **Emission and Work Practice Standards – Emission Limits for Opacity:** 63.1345

#### **§63.1345 Emissions limits for affected sources other than kilns; clinker coolers; new and reconstructed raw material dryers.**

The owner or operator of each new or existing raw material, clinker, or finished product storage bin; conveying system transfer point; bagging system; bulk loading or unloading system; raw and finish mills; and each existing raw material dryer, at a facility which is a major source subject to the provisions of this subpart must not cause to be discharged any gases from these affected sources which exhibit opacity in excess of 10 percent.

#### **Operation and Maintenance Plan:** 63.1347

#### **§63.1347 Operation and maintenance plan requirements.**

(a) You must prepare, for each affected source subject to the provisions of this subpart, a written operations and maintenance plan. The plan must be submitted to the Administrator for review and approval as part of the application for a part 70 permit and must include the following information:

(1) Procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the emissions limits and operating limits, including fugitive dust control measures for open clinker piles of §§63.1343, 63.1345, and 63.1346. Your operations and maintenance plan must address periods of startup and shutdown.

(2) Corrective actions to be taken when required by paragraph §63.1350(f)(3);

(3) Procedures to be used during an inspection of the components of the combustion system of each kiln and each in-line kiln raw mill located at the facility at least once per year.

(b) Failure to comply with any provision of the operations and maintenance plan developed in accordance with this section is a violation of the standard.

#### **Compliance Requirements – Initial Performance Test Requirements:** 63.1348(a), (a)(2)

#### **§63.1348 Compliance requirements.**

(a) *Initial Performance Test Requirements.* For an affected source subject to this subpart, you must demonstrate compliance with the emissions standards and operating limits by using the test methods and procedures in §§63.1349 and 63.7. Any cement kiln that has been subject to the requirements of subpart CCCC or subpart DDDD of 40 CFR Part 60, and is now electing to cease burning nonhazardous solid waste and become subject to this subpart, must meet all the initial compliance testing requirements each time it becomes subject to this subpart, even if it was previously subject to this subpart.

NOTE TO PARAGRAPH (a): The first day of the 30 operating day performance test is the first day after the compliance date following completion of the field testing and data collection that demonstrates that the CPMS or CEMS has satisfied the relevant CPMS performance evaluation or CEMS performance specification (e.g., PS 2, 12A, or 12B) acceptance criteria. The performance test period is complete at the end of the 30th consecutive operating day. See §63.1341 for definition of operating day and §63.1348(b)(1) for the CEMS operating requirements. The source has the option of performing the compliance test earlier than the compliance date if desired.

(2) *Opacity Compliance.* If you are subject to the limitations on opacity under §63.1345, you must demonstrate compliance with the opacity emissions standards by using the performance test methods and procedures in §63.1349(b)(2). Use the maximum 6-minute average opacity exhibited during the performance test period to determine whether the affected source is in compliance with the standard.

**Compliance Requirements - Continuous Monitoring Requirements:** 63.1348(b), (b)(1)(i)-(iii), (3)

**§63.1348 Compliance requirements.**

(b) *Continuous Monitoring Requirements.* You must demonstrate compliance with the emissions standards and operating limits by using the performance test methods and procedures in §§63.1350 and 63.8 for each affected source.

(1) *General Requirements.* (i) You must monitor and collect data according to §63.1350 and the site-specific monitoring plan required by §63.1350(p).

(ii) Except for periods of startup and shutdown, monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), you must operate the monitoring system and collect data at all required intervals at all times the affected source is operating.

(iii) You may not use data recorded during monitoring system startup, shutdown or malfunctions or repairs associated with monitoring system malfunctions in calculations used to report emissions or operating levels. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system.

(3) *Opacity Compliance.* If you are subject to the limitations on opacity under §63.1345, you must demonstrate compliance using the monitoring methods and procedures in §63.1350(f) based on the maximum 6-minute average opacity exhibited during the performance test period. You must initiate corrective actions within one hour of detecting visible emissions above the applicable limit.



(i) *COMS*. If you install a COMS in lieu of conducting the daily visible emissions testing, you must demonstrate compliance using a COMS such that it is installed, operated, and maintained in accordance with the requirements of §63.1350(f)(4)(i).

(ii) Bag leak determination system (*BLDS*). If you install a BLDS on a raw mill or finish mill in lieu of conducting the daily visible emissions testing, you must demonstrate compliance using a BLDS that is installed, operated, and maintained in accordance with the requirements of §63.1350(f)(4)(ii).

**Compliance Requirements – Changes in Operation:** 63.1348(c)

**§63.1348 Compliance requirements.**

(c) *Changes in operations*. (1) If you plan to undertake a change in operations that may adversely affect compliance with an applicable standard, operating limit, or parametric monitoring value under this subpart, the source must conduct a performance test as specified in §63.1349(b).

(2) In preparation for and while conducting a performance test required in §63.1349(b), you may operate under the planned operational change conditions for a period not to exceed 360 hours, provided that the conditions in (c)(2)(i) through (c)(2)(iv) of this section are met. You must submit temperature and other monitoring data that are recorded during the pretest operations.

(i) You must provide the Administrator written notice at least 60 days prior to undertaking an operational change that may adversely affect compliance with an applicable standard under this subpart for any source, or as soon as practicable where 60 days advance notice is not feasible. Notice provided under this paragraph must include a description of the planned change, the emissions standards that may be affected by the change, and a schedule for completion of the performance test required under paragraph (c)(1) of this section, including when the planned operational change period would begin.

(ii) The performance test results must be documented in a test report according to §63.1349(a).

(iii) A test plan must be made available to the Administrator prior to performance testing, if requested.

(iv) The performance test must be completed within 360 hours after the planned operational change period begins.

**Compliance Requirements - General Duty to Minimize Emissions:** 63.1348(d)

**§63.1348 Compliance requirements.**

(d) *General duty to minimize emissions*. At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

**Performance Testing Requirements - General Requirements:** 63.1349(a)

**§63.1349 Performance testing requirements.**

(a) You must document performance test results in complete test reports that contain the information required by paragraphs (a)(1) through (10) of this section, as well as all other relevant information. As described in §63.7(c)(2)(i), you must make available to the Administrator prior to testing, if requested, the site-specific test plan to be followed during performance testing. For purposes of determining exhaust gas flow rate to the atmosphere from an alkali bypass stack or a coal mill stack, you must either install, operate, calibrate and maintain an instrument for continuously measuring and recording the exhaust gas flow rate according to the requirements in paragraphs §63.1350(n)(1) through (10) of this subpart or use the maximum design exhaust gas flow rate. For purposes of determining the combined emissions from kilns equipped with an alkali bypass or that exhaust kiln gases to a coal mill that exhausts through a separate stack, instead of installing a CEMS on the alkali bypass stack or coal mill stack, you may use the results of the initial and subsequent performance test to demonstrate compliance with the relevant emissions limit.

- (1) A brief description of the process and the air pollution control system;
- (2) Sampling location description(s);
- (3) A description of sampling and analytical procedures and any modifications to standard procedures;
- (4) Test results;
- (5) Quality assurance procedures and results;
- (6) Records of operating conditions during the performance test, preparation of standards, and calibration procedures;
- (7) Raw data sheets for field sampling and field and laboratory analyses;
- (8) Documentation of calculations;
- (9) All data recorded and used to establish parameters for monitoring; and
- (10) Any other information required by the performance test method

**Performance Testing Requirements - Pollutant Specific Requirements for Opacity:** 63.1349(b)(2)

**§63.1349 Performance testing requirements.**

(b) \* \* \*

(2) *Opacity tests.* If you are subject to limitations on opacity under this subpart, you must conduct opacity tests in accordance with Method 9 of appendix A-4 to part 60 of this chapter. The duration of the Method 9 performance test must be 3 hours (30 6-minute averages), except that the duration of the Method 9 performance test may be reduced to 1 hour if the conditions of paragraphs (b)(2)(i) and (ii) of this section apply. For batch processes that are not run for 3-hour periods or longer, compile observations totaling 3 hours when the unit is operating.

- (i) There are no individual readings greater than 10 percent opacity;
- (ii) There are no more than three readings of 10 percent for the first 1-hour period.

**Monitoring – Opacity:** 63.1350(f), (f)(1), (3)

**§63.1350 Monitoring requirements.**

(f) *Opacity monitoring requirements.* If you are subject to a limitation on opacity under §63.1345, you must conduct required opacity monitoring in accordance with the provisions of paragraphs (f)(1)(i) through (vii) of this section and in accordance with your monitoring plan developed under §63.1350(p). You must also develop an opacity monitoring plan in accordance with paragraphs (p)(1) through (4) and paragraph (o)(5), if applicable, of this section.

(1)(i) You must conduct a monthly 10-minute visible emissions test of each affected source in accordance with Method 22 of appendix A-7 to part 60 of this chapter. The performance test must be conducted while the affected source is in operation.

(ii) If no visible emissions are observed in six consecutive monthly tests for any affected source, the owner or operator may decrease the frequency of performance testing from monthly to semi-annually for that affected source. If visible emissions are observed during any semi-annual test, you must resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

(iii) If no visible emissions are observed during the semi-annual test for any affected source, you may decrease the frequency of performance testing from semi-annually to annually for that affected source. If visible emissions are observed during any annual performance test, the owner or operator must resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

(iv) If visible emissions are observed during any Method 22 performance test, of appendix A-7 to part 60 of this chapter, you must conduct 30 minutes of opacity observations, recorded at 15-second intervals, in accordance with Method 9 of appendix A-4 to part 60 of this chapter. The Method 9 performance test, of appendix A-4 to part 60 of this chapter, must begin within 1 hour of any observation of visible emissions.

(v) Any totally enclosed conveying system transfer point, regardless of the location of the transfer point is not required to conduct Method 22 visible emissions monitoring under this paragraph. The enclosures for these transfer points must be operated and maintained as total enclosures on a continuing basis in accordance with the facility operations and maintenance plan.

(vi) If any partially enclosed or unenclosed conveying system transfer point is located in a building, you must conduct a Method 22 performance test, of appendix A-7 to part 60 of this chapter, according to the requirements of paragraphs (f)(1)(i) through (iv) of this section for each such conveying system transfer point located within the building, or for the building itself, according to paragraph (f)(1)(vii) of this section.

(vii) If visible emissions from a building are monitored, the requirements of paragraphs (f)(1)(i) through (f)(1)(iv) of this section apply to the monitoring of the building, and you must also test visible emissions from each side, roof, and vent of the building for at least 10 minutes.

(3) If visible emissions are observed during any Method 22 visible emissions test conducted under paragraphs (f)(1) or (2) of this section, you must initiate, within one-hour, the corrective actions specified in your operation and maintenance plan as required in §63.1347.